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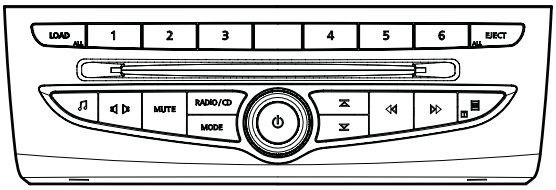
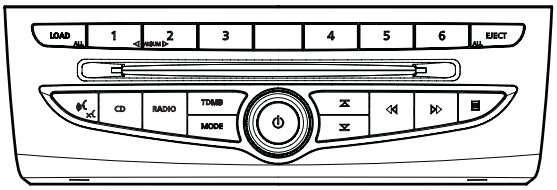
Published by Service Dept.
298-6539-00 Jan.2008
Printed in Japan

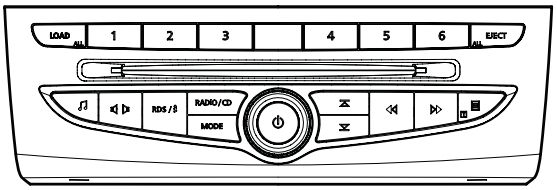
Service Manual



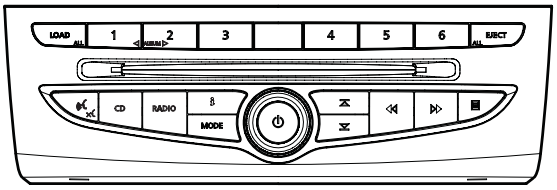
(PN-2940S-A, S-E)



(PN-2940S-B, S-F)



(PN-2940S-C)



(PN-2940S-D)

RENAULT Genuine
6-disc CD/MP3/WMA Autochanger
With Sub Control Panel Switch

Model PN-2940S-A
(Genuine No. 28184 JY10A)
(Facial color : Black) (For Korea)

Model PN-2940S-B
(Genuine No. 28184 JY10B)
(Facial color : Black) (For Korea)

Model PN-2940S-C
(Genuine No. 28184 JY00A)
(Facial color : Black) (For Europe)

Model PN-2940S-D
(Genuine No. 28184 JY00B)
(Facial color : Black) (For Europe)

Model PN-2940S-E
(Genuine No. 28184 JY20A)
(Facial color : Wood type) (For Korea)

Model PN-2940S-F
(Genuine No. 28184 JY20B)
(Facial color : Wood type) (For Korea)

SPECIFICATIONS

Disc format:	CD-DA, CD-R/RW
Disc:	12cm disc
MP3 mode:	
Sampling rate:	MPEG1 ; 32kHz, 44.1kHz, 48kHz
	MPEG2 ; 24kHz, 22.05kHz, 16kHz
	MPEG2.5; 8kHz, 11.025kHz, 12kHz
Bit rate:	MPEG1 ; 32k to 320kbps/VBR
	MPEG2 ; 8k to 160kbps/VBR
	MPEG2.5 ; 8k to 160kbps/VBR
Logical Format;	ISO9660 level1, 2
	Romeo or Joliet
WMA mode:	
Sampling rate:	Ver 7 ; 32kHz, 44.1kHz
	Ver 8 ; 32kHz, 44.1kHz
	Ver 9 ; 32kHz, 44.1kHz, 48kHz
Bit rate:	48k to 192kbps/VBR
B/U Current consumption:	
	Less than 0.25mA
Distortion:	Less than 0.2%(20kHz L.P.F.)
Power supply voltage:	13.2V DC(10.8V to 15.6V)
Ground:	Negative
Dimensions(mm):	231.43(W) x 75(H) x 183(D)
Weight:	1.95kg

NOTES

* This product includes technology owned by Microsoft Corporation and cannot be used or distributed without a license from MSLGP
* This unit is used special adjustment jig for measuring.
* Special data is individually written in ROM IC used for this model. When ROM IC BR93L56RFVM-W(IC7) is replaced, it is necessary to write data.
* We cannot supply PWB with component parts in principle. When a circuit on PWB has failure, please repair it by component parts base. Parts which are not mentioned in service manual are not supplied.
* Specifications and design are subject to change without notice for further improvement.

COMPONENTS

1. Main unit ---------- 1

To engineers in charge of repair or inspection of our products.

Before repair or inspection, make sure to follow the instructions so that customers and Engineers in charge of repair or inspection can avoid suffering any risk or injury.

1. Use specified parts.
   The system uses parts with special safety features against fire and voltage. Use only parts with equivalent characteristics when replacing them.
   The use of unspecified parts shall be regarded as remodeling for which we shall not be liable. The onus of product liability (PL) shall not be our responsibility in cases where an accident or failure is as a result of unspecified parts being used.
2. Place the parts and wiring back in their original positions after replacement or re-wiring.
   For proper circuit construction, use of insulation tubes, bonding, gaps to PWB, etc, is involved. The wiring connection and routing to the PWB are specially planned using clamps to keep away from heated and high voltage parts. Ensure that they are placed back in their original positions after repair or inspection.
   If extended damage is caused due to negligence during repair, the legal responsibility shall be with the repairing company.
3. Check for safety after repair.
   Check that the screws, parts and wires are put back securely in their original position after repair. Ensure for safety reasons there is no possibility of secondary ploblems around the repaired spots.
   If extended damage is caused due to negligence of repair, the legal responsibility shall be with the repairing company.
4. Caution in removal and making wiring connection to the parts for the automobile.
   Disconnect the battery terminal after turning the ignition key off. If wrong wiring connections are made with the battery connected, a short circuit and/or fire may occur. If extensive damage is caused due to negligence of repair, the legal responsibility shall be with the repairing company.
5. Cautions in soldering
   Please do not spread liquid flux in soldering.
   Please do not wash the soldering point after soldering.
6. Cautions in soldering for chip capacitors
   Please solder the chip capacitors after pre-heating for replacement because they are very weak to heat.
   Please do not heat the chip capacitors with a soldering iron directly.
7. Cautions in handling for chip parts.
   Do not reuse removed chips even when no abnormality is observed in their appearance. Always replace them with new ones. (The chip parts include resistors, capacitors, diodes, transistors, etc).
   Please make an operation test after replacement.
8. Cautions in handling flexible PWB
   Before working with a soldering iron, make sure that the iron tip temperature is around 270℃. Take care not to apply the iron tip repeatedly(more than three times)to the same patterns. Also take care not to apply the tip with force.
9. Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.
10. Cautions in checking that the optical pickup lights up.
    The laser is focused on the disc reflection surface through the lens of the optical pickup. When checking that the laser optical diode lights up, keep your eyes more than 30cms away from the lens. Prolonged viewing of the laser within 30cms may damage your eyesight.
11. Cautions in handling the optical pickup
    The laser diode of the optical pickup can be damaged by electrostatic charge caused by your clothes and body. Make sure to avoid electrostatic charges on your clothes or body, or discharge static electricity before handling the optical pickup.

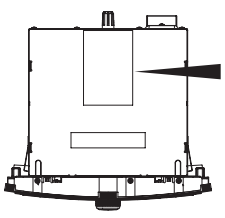
11-1. Laser diode
The laser diode terminals are shorted for transportation in order to prevent electrostatic damage. After replacement, open the shorted circuit. When removing the pickup from the mechanism, short the terminals by soldering them to prevent this damage.

11-2. Actuator
The actuator has a powerful magnetic circuit. If a magnetic material is put close to it. Its characteristics will change. Ensure that no foreign substances enter through the ventilation slots in the cover.

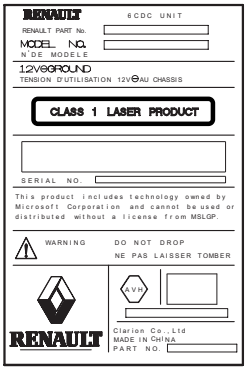
11-3. Cleaning the lens
Dust on the optical lens affects performance.
To clean the lens, apply a small amount of isopropyl alcohol to lens paper and wipe the lens gently.

CAUTIONS

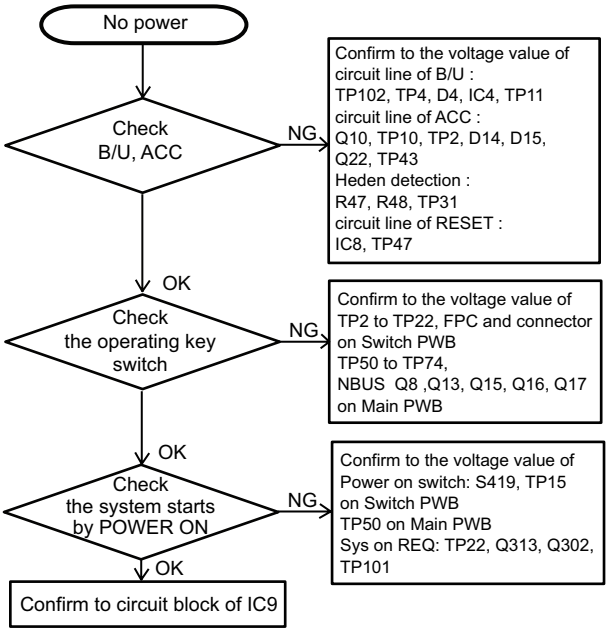
This appliance contains a laser system and is classified as a "CLASS 1 LASER PRODUCT". In case of any trouble with this player, please contact your nearest "AUTHORIZED service station". To prevent direct exposure to the laser beam,do not to open the enclosure.

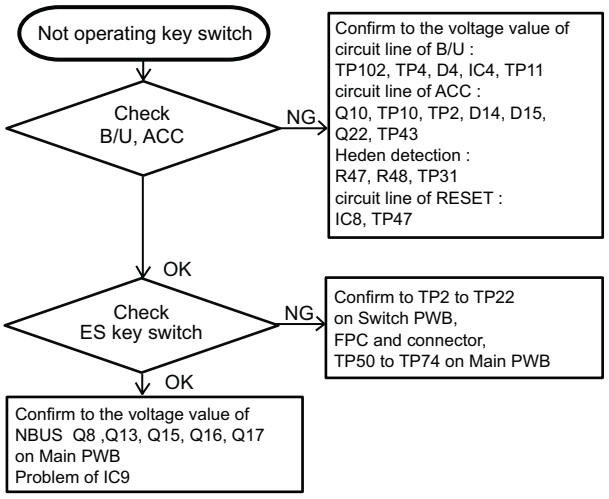


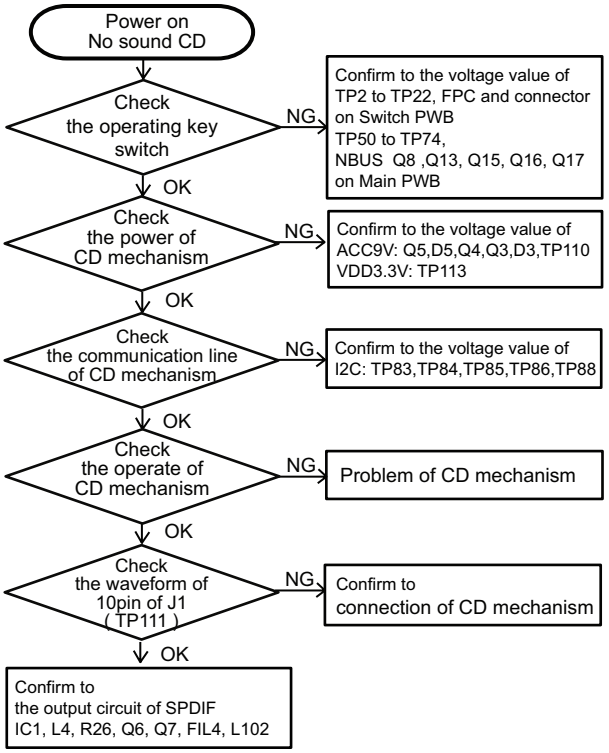
Top view of the unit

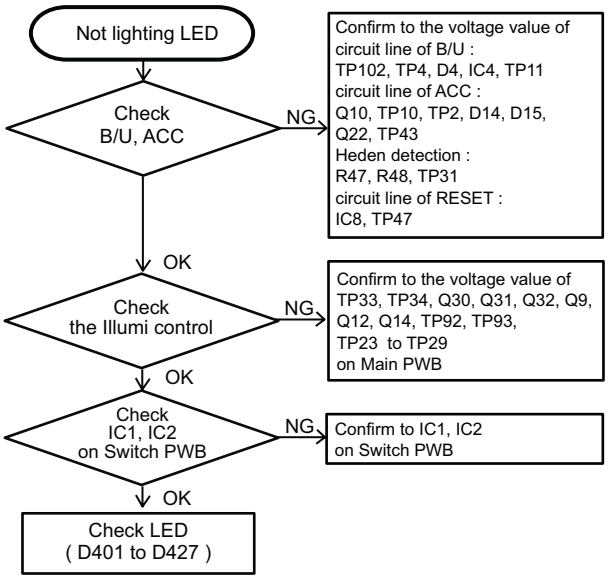


TROUBLESHOOTING

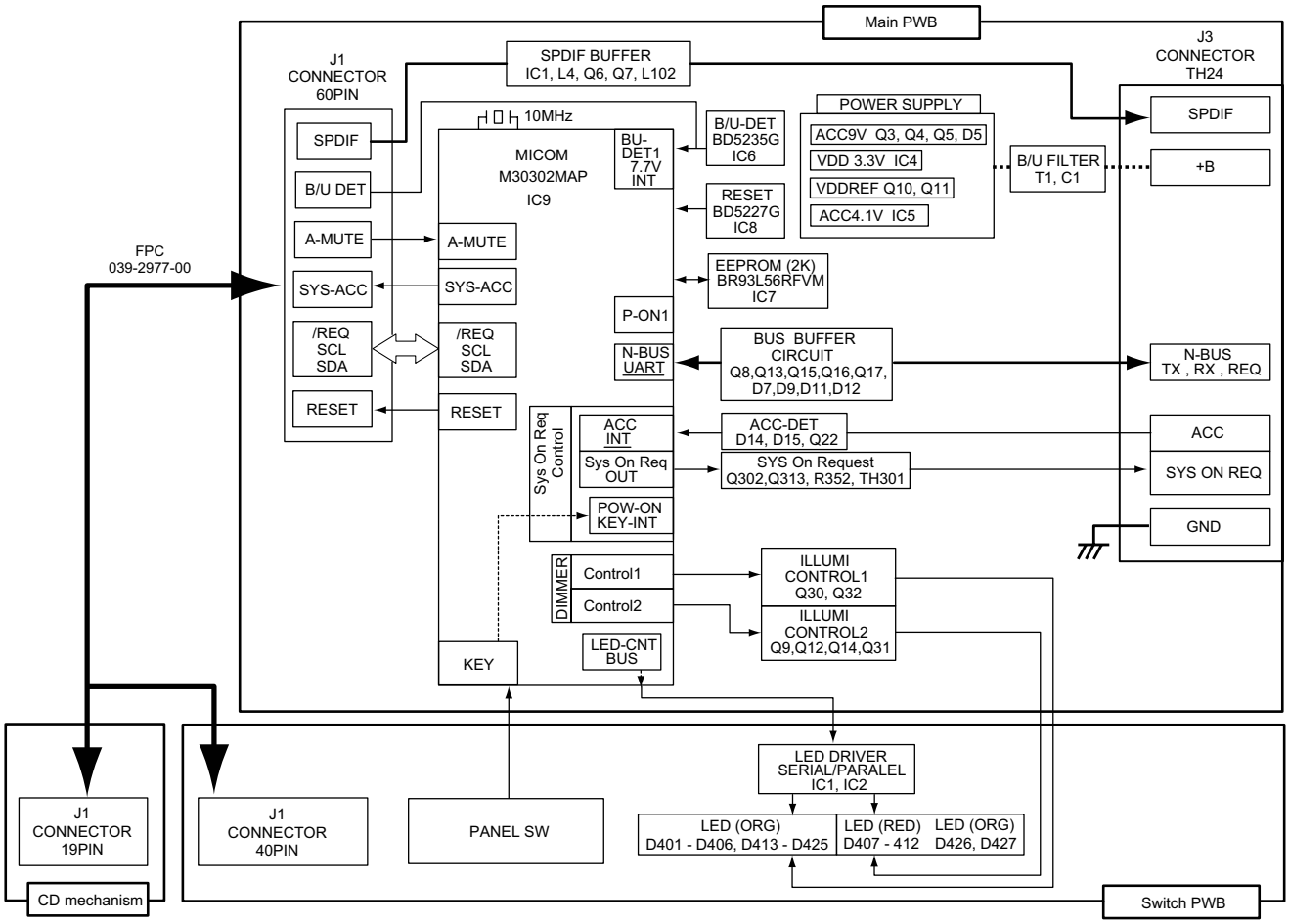

No power
Check B/U, ACC
NG
Confirm to the voltage value of circuit line of B/U : TP102, TP4, D4, IC4, TP11 circuit line of ACC : Q10, TP10, TP2, D14, D15, Q22, TP43 Heden detection : R47, R48, TP31 circuit line of RESET : IC8, TP47
OK
Check the operating key switch
NG
Confirm to the voltage value of TP2 to TP22, FPC and connector on Switch PWB TP50 to TP74, NBUS Q8 ,Q13, Q15, Q16, Q17 on Main PWB
OK
Check the system starts by POWER ON
NG
Confirm to the voltage value of Power on switch: S419, TP15 on Switch PWB TP50 on Main PWB Sys on REQ: TP22, Q313, Q302, TP101
OK
Confirm to circuit block of IC9


Not operating key switch
Check B/U, ACC
NG
Confirm to the voltage value of circuit line of B/U : TP102, TP4, D4, IC4, TP11 circuit line of ACC : Q10, TP10, TP2, D14, D15, Q22, TP43 Heden detection : R47, R48, TP31 circuit line of RESET : IC8, TP47
OK
Check ES key switch
NG
Confirm to TP2 to TP22 on Switch PWB, FPC and connector, TP50 to TP74 on Main PWB
OK
Confirm to the voltage value of NBUS Q8 ,Q13, Q15, Q16, Q17 on Main PWB Problem of IC9


Power on No sound CD
Check the operating key switch
NG
Confirm to the voltage value of TP2 to TP22, FPC and connector on Switch PWB TP50 to TP74, NBUS Q8 ,Q13, Q15, Q16, Q17 on Main PWB
OK
Check the power of CD mechanism
NG
Confirm to the voltage value of ACC9V: Q5,D5,Q4,Q3,D3,TP110 VDD3.3V: TP113
OK
Check the communication line of CD mechanism
NG
Confirm to the voltage value of I2C: TP83,TP84,TP85,TP86,TP88
OK
Check the operate of CD mechanism
NG
Problem of CD mechanism
OK
Check the waveform of 10pin of J1 (TP111)
NG
Confirm to connection of CD mechanism
OK
Confirm to the output circuit of SPDIF IC1, L4, R26, Q6, Q7, FIL4, L102


Not lighting LED
Check B/U, ACC
NG
Confirm to the voltage value of circuit line of B/U : TP102, TP4, D4, IC4, TP11 circuit line of ACC : Q10, TP10, TP2, D14, D15, Q22, TP43 Heden detection : R47, R48, TP31 circuit line of RESET : IC8, TP47
OK
Check the Illumi control
NG
Confirm to the voltage value of TP33, TP34, Q30, Q31, Q32, Q9, Q12, Q14, TP92, TP93, TP23 to TP29 on Main PWB
OK
Check IC1, IC2 on Switch PWB
NG
Confirm to IC1, IC2 on Switch PWB
OK
Check LED (D401 to D427)

BLOCK DIAGRAM

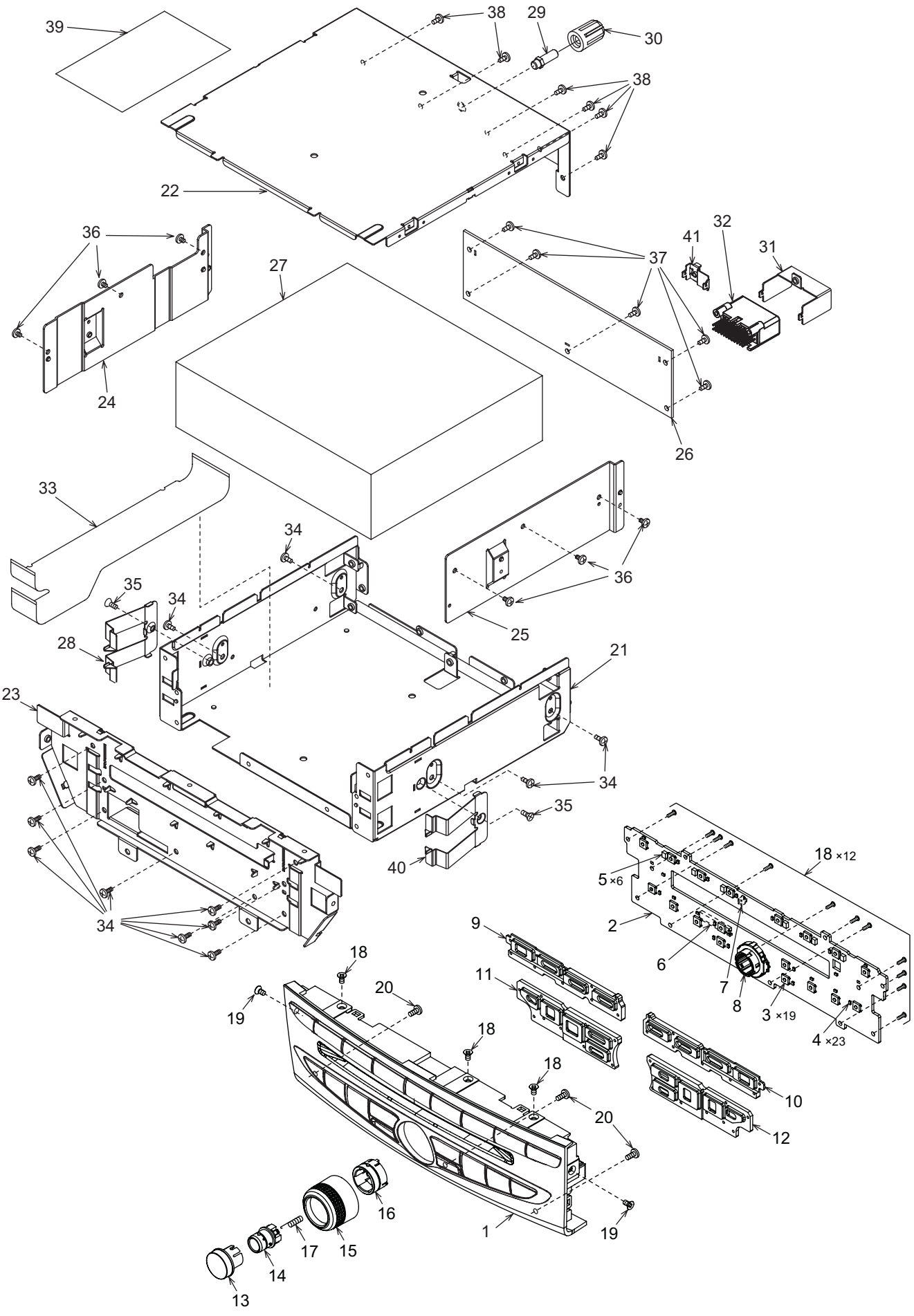


EXPLODED VIEW / PARTS LIST

Main section

NO.	PART NO.	DESCRIPTION	Q'TY
1	940-8180-00 940-8180-10 940-8180-20 940-8180-30 940-8180-42 940-8180-52	ES-ASSY (PN-2940S-A) ES-ASSY (PN-2940S-B) ES-ASSY (PN-2940S-C) ES-ASSY (PN-2940S-D) ES-ASSY (PN-2940S-E) ES-ASSY (PN-2940S-F)	1
2	----------	SWITCH PWB	1
3	013-6301-50	SWITCH	19
4	001-7093-92	LED(ORG)	23
5	001-7107-91	LED(RED)	6
6	074-1189-90	OUTLET SOCKET(40P)	1
7	073-0778-90	TERMINAL	1
8	016-7000-00	ROTARY ENCODER	1
9	345-6098-00	ILLUMI RUBBER A	1
10	345-6099-00	ILLUMI RUBBER B	1
11	345-6022-00	ILLUMI RUBBER C	1
12	345-6023-00	ILLUMI RUBBER D	1
13	382-8276-00	BUTTON(POWER)	1
14	335-8063-00	BUTTON HOLDER	1
15	380-5698-00	KNOB	1
16	335-8062-00	KNOB HOLDER	1
17	750-6844-00	SPRING	1
18	716-0778-51	WAVE SCREW(2 x 6)	12
19	714-2605-4B	MACHINE SCREW(M2.5 x 6)	5
20	778-3006-51	SCREW(3 x 6)	3
21	311-1931-00	LOWER CASE	1

NO.	PART NO.	DESCRIPTION	Q'TY
22	310-1841-00	UPPER CASE	1
23	309-0844-01	ES-PLATE	1
24	331-4305-00	MECH-BRKT(L)	1
25	331-4306-00	MECH-BRKT(R)	1
26	----------	MAIN PWB	1
27	929-0383-80	CD-CHANGER-MODULE	1
28	331-4303-00	SIDE SPRING(L)	1
29	716-3570-00	REAR BOLT	1
30	345-5911-00	STOPPER	1
31	331-4302-00	CONNECTOR HOLDER	1
32	074-4011-24	OUTLET SOCKET	1
33	039-2977-00	FPC(WITHOUT COMPONENT)	1
34	714-2605-8B	MACHINE SCREW(M2.6 x 5)	12
35	714-3006-4B	MACHINE SCREW(M3 x 6)	2
36	716-3552-00	SCREW(M2.3 x 2.5)	6
37	716-0878-50	IT SCREW(M2.6 x 5)	5
38	714-2606-8H	MACHINE SCREW(M2.6 x 6)	6
39	276-0322-00 276-0322-01 276-0322-02 276-0322-03 276-0322-04 276-0322-05	SETPLATE (PN-2940S-A) SETPLATE (PN-2940S-B) SETPLATE (PN-2940S-C) SETPLATE (PN-2940S-D) SETPLATE (PN-2940S-E) SETPLATE (PN-2940S-F)	1
40	331-4304-00	SIDE SPRING(R)	1
41	331-4300-00	TR-HOLDER	1



PN-2940S-A,
S-B,C,D,E,F

ELECTRICAL PARTS LIST

Main PWB(B1) section

REF No.	PART No.	DESCRIPTION
C1	042-0643-56	16V 470uF M
C2	042-0643-56	16V 470uF M
C3	043-0554-90	25V 10uF
C4	166-1011-50	100pF CH
C9	168-1032-55	0.01uF K
C10	178-1052-78	1uF
C11	042-0643-58	6.3V 330uF
C12	168-1045-56	0.1uF Z
C13	042-0643-57	16V 220uF
C14	178-1052-78	1uF
C15	043-0568-90	25V 2.2uF
C16	178-1052-78	1uF
C17	163-4763-15	6.3V 47uF
C18	163-4763-15	6.3V 47uF
C19	166-1021-50	1000pF CH
C21	166-1021-50	1000pF CH
C22	178-1052-78	1uF
C23	166-1021-50	1000pF CH
C24	168-2232-55	0.022uF K
C25	166-1011-50	100pF CH
C26	168-1045-56	0.1uF Z
C27	168-1032-55	0.01uF K
C28	163-1063-35	16V 10uF
C29	168-1045-56	0.1uF Z
C31	168-6832-78	0.068uF K
C32	166-1011-50	100pF CH
C33	163-1053-65	50V 1uF
C34	166-1011-50	100pF CH
C35	168-1045-56	0.1uF Z
C36	168-1045-56	0.1uF Z
C37	166-1011-50	100pF CH
C38	168-1032-55	0.01uF K
C39	043-0552-90	6.3V 47uF M
C40	166-1011-50	100pF CH
C41	168-1042-78	16V 0.1uF
C42	168-1022-55	1000pF K
C44	168-1045-56	0.1uF Z
C45	168-1045-56	0.1uF Z
C46	166-1011-50	100pF CH
C47	168-1042-78	16V 0.1uF
C48	166-1501-50	15pF CH
C51	168-1042-78	16V 0.1uF
C52	168-1042-78	16V 0.1uF
C356	166-5611-50	560pF CH
CCT1	050-0140-67	1/32W 220 ohm x4J
CCT3	050-0140-67	1/32W 220 ohm x4J
CCT4	050-0140-55	1/32W 2.2k ohmx4J
CCT5	050-0140-67	1/32W 220 ohm x4J
CCT6	050-0140-67	1/32W 220 ohm x4J
CCT7	050-0140-67	1/32W 220 ohm x4J
CCT8	050-0140-63	1/32W 47k ohm x4J
CCT9	050-0140-67	1/32W 220 ohm x4J
CCT10	050-0140-63	1/32W 47k ohm x4J
CCT11	050-0140-63	1/32W 47k ohm x4J
CCT12	050-0140-67	1/32W 220 ohm x4J
CCT13	050-0140-63	1/32W 47k ohm x4J
CCT17	050-0140-63	1/32W 47k ohm x4J
CCT18	050-0140-63	1/32W 47k ohm x4J
D1	001-2015-00	RL253
D2	001-4100-38	PTZ36

REF No.	PART No.	DESCRIPTION
D3	001-1304-90	DAN202U
D4	001-2403-90	M1F60
D5	001-4100-50	PTZ TE25 9.1B
D6	001-0529-32	MA8056-M
D7	001-4100-38	PTZ36
D8	001-0529-32	MA8056-M
D9	001-0516-90	MA111
D10	001-0516-90	MA111
D11	001-0516-90	MA111
D12	001-4100-38	PTZ36
D14	001-2403-90	M1F60
D15	001-0529-20	MA8039-L
D303	001-0516-90	MA111
FIL4	060-3113-95	NFM2012R13C102R
IC1	051-7243-18	TC7SET08FU-TE85L,F
IC4	051-3344-90	BD3930FP-E2
IC5	051-3388-90	NJM2887DL3-TE1
IC6	051-5452-90	BD5235G-TR
IC7	----------	BR93L56RFVM-W
IC8	051-5445-08	BD5227G-TR
IC9	052-5075-00	M30302MAP-A44GP
J1	074-2015-60	60P
J3	074-4011-24	OUTLET SOCKET
L3	010-3104-50	30 ohm/100MHz
L4	010-3105-69	80 ohm/100MHz
L102	010-3604-90	ZJYS51R5-2PB
Q3	125-2027-91	DTC114EUA
Q4	125-0021-91	DTA114EUA
Q5	103-2353-00	2SD2353
Q6	192-3325-00	2SC3325
Q7	190-1313-00	2SA1313 O,Y
Q8	192-4116-50	2SC4116 Y,G
Q9	133-1766-00	2SD1766
Q10	190-1586-50	2SA1586 Y,G
Q11	125-2027-91	DTC114EUA
Q12	125-2027-91	DTC114EUA
Q13	125-0021-91	DTA114EUA
Q14	131-1188-00	2SB1188
Q15	192-4116-50	2SC4116 Y,G
Q16	192-4116-50	2SC4116 Y,G
Q17	125-2027-91	DTC114EUA
Q22	193-1819-50	2SD1819AR,SL
Q30	125-2027-91	DTC114EUA
Q31	125-2027-91	DTC114EUA
Q32	131-1188-00	2SB1188
Q302	131-1188-00	2SB1188
Q313	125-2027-95	DTC143ZU
R9	116-3901-15	1/4W 39 ohm
R10	116-3901-15	1/4W 39 ohm
R13	116-3901-15	1/4W 39 ohm
R14	116-3901-15	1/4W 39 ohm
R15	119-1041-15	1/10W 100k ohm
R16	116-2711-15	1/4W 270 ohm
R17	032-0140-88	1/10W 100k ohm F
R18	032-0140-03	1/10W 220k ohm F
R19	119-0000-05	1/10W 0 ohm JW
R20	116-2401-15	1/4W 24 ohm
R24	119-1031-15	1/10W 10k ohm
R26	119-2711-15	1/10W 270 ohm

REF No.	PART No.	DESCRIPTION
R27	119-2211-15	1/10W 220 ohm
R28	119-2231-15	1/10W 22k ohm
R30	119-5621-15	1/10W 5.6k ohm
R31	119-5631-15	1/10W 56k ohm
R32	119-4711-15	1/10W 470 ohm
R33	119-5631-15	1/10W 56k ohm
R34	119-1031-15	1/10W 10k ohm
R35	119-1021-15	1/10W 1k ohm
R36	119-1031-15	1/10W 10k ohm
R37	119-1031-15	1/10W 10k ohm
R38	119-1521-15	1/10W 1.5k ohm
R39	119-1031-15	1/10W 10k ohm
R40	119-5631-15	1/10W 56k ohm
R41	119-4731-15	1/10W 47k ohm
R42	119-1031-15	1/10W 10k ohm
R47	032-0140-96	1/10W 120k ohm F
R48	032-0140-88	1/10W 100k ohm F
R49	119-1041-15	1/10W 100k ohm
R50	116-3321-15	1/4W 3.3k ohm
R51	119-1031-15	1/10W 10k ohm
R52	119-1031-15	1/10W 10k ohm
R53	119-1041-15	1/10W 100k ohm
R54	119-1041-15	1/10W 100k ohm
R55	119-5611-15	1/10W 560 ohm
R56	119-1031-15	1/10W 10k ohm
R57	119-2221-15	1/10W 2.2k ohm
R58	119-4731-15	1/10W 47k ohm
R60	119-4731-15	1/10W 47k ohm
R61	119-0000-05	1/10W 0 ohm JW
R62	119-1041-15	1/10W 100k ohm
R63	119-1041-15	1/10W 100k ohm
R64	119-2211-15	1/10W 220 ohm
R65	119-2211-15	1/10W 220 ohm
R66	119-0000-05	1/10W 0 ohm JW
R68	119-0000-05	1/10W 0 ohm JW
R71	119-0000-05	1/10W 0 ohm JW
R73	119-2721-15	1/10W 2.7k ohm
R74	119-2721-15	1/10W 2.7k ohm
R75	119-4721-15	1/10W 4.7k ohm
R82	119-0000-05	1/10W 0 ohm JW
R83	119-0000-05	1/10W 0 ohm JW
R90	119-1021-15	1/10W 1k ohm
R91	119-1031-15	1/10W 10k ohm
R92	119-4731-15	1/10W 47k ohm
R352	116-1091-15	1/4W 1 ohm
R354	119-2221-15	1/10W 2.2k ohm
R355	119-2221-15	1/10W 2.2k ohm
R358	119-1031-15	1/10W 10k ohm
T1	009-0679-00	CHOKE 0.53mH
TH301	002-0229-00	PTH8L05BAIR8M1B
TM1	073-0762-90	TERMINAL
TM2	073-0768-90	TERMINAL
TM3	073-0762-90	TERMINAL
TM4	073-0768-90	TERMINAL
TM5	073-0762-90	TERMINAL
X1	060-1533-90	CSTCE10M0G52-RO
PWB	039-2974-00	PWB(WITHOUT COMPONENT)

Switch PWB(B2) section

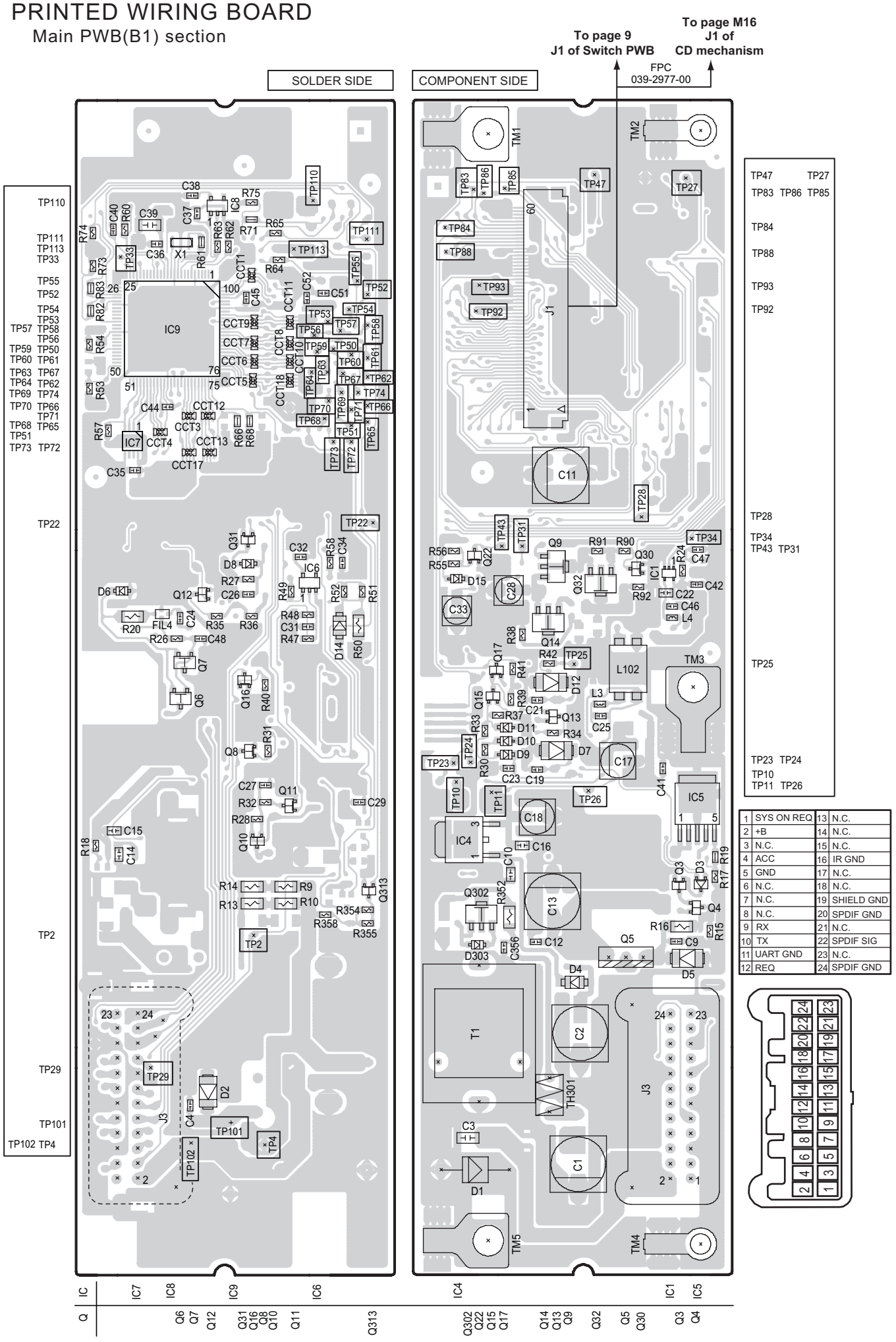
REF No.	PART No.	DESCRIPTION
C51	117-1021-15	1/8W 1k ohm
C52	178-1052-78	1uF
C401	168-1042-78	16V 0.1uF
C403	166-2211-50	220pF CH
C404	168-1042-78	16V 0.1uF
C406	166-2211-50	220pF CH
D401	001-7093-92	RFA1112H(ORG)
D402	001-7093-92	RFA1112H(ORG)
D403	001-7093-92	RFA1112H(ORG)
D404	001-7093-92	RFA1112H(ORG)
D405	001-7093-92	RFA1112H(ORG)
D406	001-7093-92	RFA1112H(ORG)
D407	001-7107-91	LS E6SF-AABA-1-1(RED)
D408	001-7107-91	LS E6SF-AABA-1-1(RED)
D409	001-7107-91	LS E6SF-AABA-1-1(RED)
D410	001-7107-91	LS E6SF-AABA-1-1(RED)
D411	001-7107-91	LS E6SF-AABA-1-1(RED)
D412	001-7107-91	LS E6SF-AABA-1-1(RED)
D413	001-7093-92	RFA1112H(ORG)
D414	001-7093-92	RFA1112H(ORG)
D415	001-7093-92	RFA1112H(ORG)
D416	001-7093-92	RFA1112H(ORG)
D417	001-7093-92	RFA1112H(ORG)
D418	001-7093-92	RFA1112H(ORG)
D419	001-7093-92	RFA1112H(ORG)
D420	001-7093-92	RFA1112H(ORG)
D423	001-7093-92	RFA1112H(ORG)
D424	001-7093-92	RFA1112H(ORG)
D425	001-7093-92	RFA1112H(ORG)

REF No.	PART No.	DESCRIPTION
D426	001-7093-92	RFA1112H(ORG)
D427	001-7093-92	RFA1112H(ORG)
D486	001-7093-92	RFA1112H(ORG)
D487	001-7093-92	RFA1112H(ORG)
D491	001-7093-92	RFA1112H(ORG)
D492	001-7093-92	RFA1112H(ORG)
IC1	051-6088-90	BU2099FV-E2
IC2	051-6088-90	BU2099FV-E2
J1	074-1189-90	40P
Q10	190-1586-50	2SA1586 Y,G
R401	117-1221-15	1/8W 1.2k ohm
R402	117-1221-15	1/8W 1.2k ohm
R403	117-1221-15	1/8W 1.2k ohm
R404	117-1021-15	1/8W 1k ohm
R405	117-1021-15	1/8W 1k ohm
R406	117-1221-15	1/8W 1.2k ohm
R407	117-3311-15	1/8W 330 ohm
R408	117-3311-15	1/8W 330 ohm
R409	117-3311-15	1/8W 330 ohm
R410	117-3311-15	1/8W 330 ohm
R411	117-3911-15	1/8W 390 ohm
R412	117-3311-15	1/8W 330 ohm
R413	117-2221-15	1/8W 2.2k ohm
R414	117-2221-15	1/8W 2.2k ohm
R415	117-1521-15	1/8W 1.5k ohm
R416	117-2221-15	1/8W 2.2k ohm
R417	117-2221-15	1/8W 2.2k ohm
R418	117-1521-15	1/8W 1.5k ohm
R419	117-2221-15	1/8W 2.2k ohm
R420	117-1821-15	1/8W 1.8k ohm
R423	117-1021-15	1/8W 1k ohm
R424	117-1021-15	1/8W 1k ohm
R425	117-1021-15	1/8W 1k ohm
R426	117-8211-15	1/8W 820 ohm
R427	117-1221-15	1/8W 1.2k ohm

REF No.	PART No.	DESCRIPTION
R428	119-1031-15	1/10W 10k ohm
R429	119-1021-15	1/10W 1k ohm
R430	119-1021-15	1/10W 1k ohm
R431	119-1021-15	1/10W 1k ohm
R432	119-1021-15	1/10W 1k ohm
R433	119-1021-15	1/10W 1k ohm
R434	119-1021-15	1/10W 1k ohm
R435	119-1021-15	1/10W 1k ohm
R486	117-2221-15	1/8W 2.2k ohm
R487	117-2221-15	1/8W 2.2k ohm
R491	117-1521-15	1/8W 1.5k ohm
R492	117-1221-15	1/8W 1.2k ohm
S401	013-6301-50	SKQGAB
S402	013-6301-50	SKQGAB
S403	013-6301-50	SKQGAB
S404	013-6301-50	SKQGAB
S405	013-6301-50	SKQGAB
S406	013-6301-50	SKQGAB
S407	013-6301-50	SKQGAB
S408	013-6301-50	SKQGAB
S409	013-6301-50	SKQGAB
S410	013-6301-50	SKQGAB
S411	013-6301-50	SKQGAB
S412	013-6301-50	SKQGAB
S413	013-6301-50	SKQGAB
S414	013-6301-50	SKQGAB
S415	013-6301-50	SKQGAB
S416	013-6301-50	SKQGAB
S417	013-6301-50	SKQGAB
S418	013-6301-50	SKQGAB
S419	013-6301-50	SKQGAB
TM1	073-0778-90	TERMINAL
VR401	016-7000-00	ROTARY ENCODER
PWB	039-3065-00	PWB(WITHOUT COMPONENT)

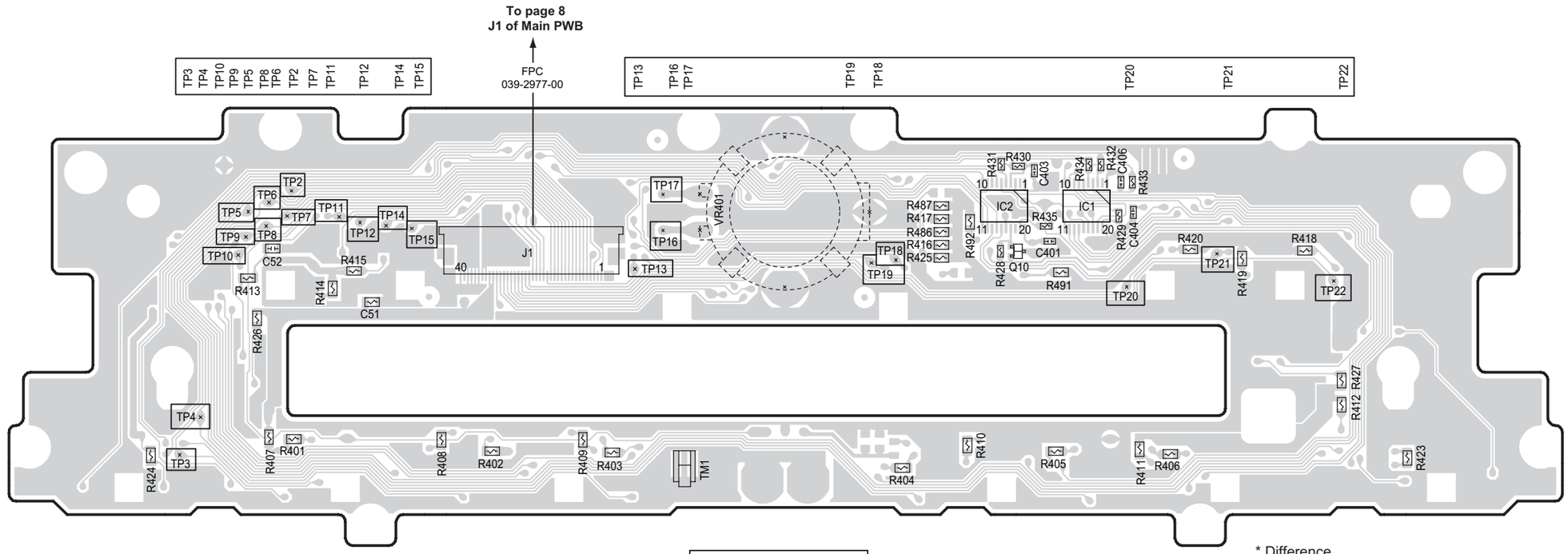
PRINTED WIRING BOARD

Main PWB(B1) section



1	SYS ON REQ	13	N.C.
2	+B	14	N.C.
3	N.C.	15	N.C.
4	ACC	16	IR GND
5	GND	17	N.C.
6	N.C.	18	N.C.
7	N.C.	19	SHIELD GND
8	N.C.	20	SPDIF GND
9	RX	21	N.C.
10	TX	22	SPDIF SIG
11	UART GND	23	N.C.
12	REQ	24	SPDIF GND

Switch PWB(B2) section



* Difference

	S409	S410	S411	S412
PN-2940S-A PN-2940S-E	AUDIO MODE	SOUND MODE	MUTE	RADIO / CD
PN-2940S-B PN-2940S-F	NAVI GUIDANCE	CD	RADIO	TDMB
PN-2940S-C	AUDIO MODE	SOUND MODE	RDS/ RDS-INTERRUPT RDS /	RADIO / CD
PN-2940S-D	NAVI GUIDANCE	CD	RADIO	RDS-INTERRUPT

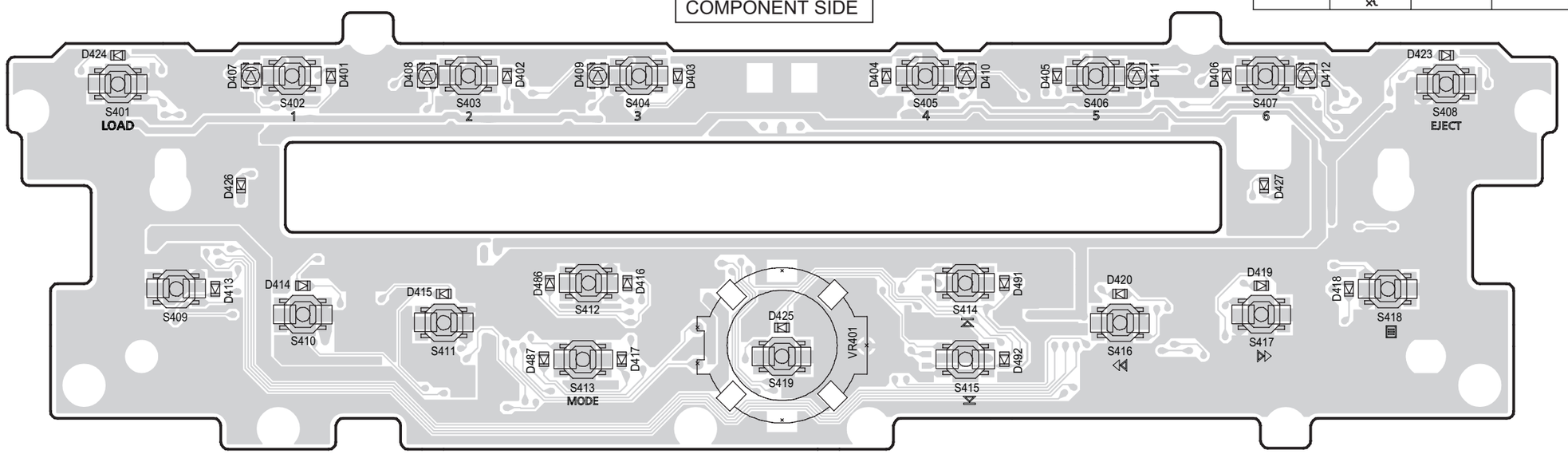
Caution:

COMPONENT SIDE: Parts on the component side seen from the component side are indicated.

SOLDER SIDE: Parts on the solder side seen from the solder side are indicated.

The parts of a dotted line express the parts on a component side.

COMPONENT SIDE



CIRCUIT DIAGRAM

Main PWB(B1) section 1/2

1	SYS ON REQ
2	+B
3	N.C.
4	ACC
5	GND
6	N.C.
7	N.C.
8	N.C.
9	RX
10	TX
11	UART GND
12	REQ
13	N.C.
14	N.C.
15	N.C.
16	IR GND
17	N.C.
18	N.C.
19	SHIELD GND
20	SPDIF GND
21	N.C.
22	SPDIF SIG
23	N.C.
24	SPDIF GND

13.0V * 500msec
POWER SW IS PUSHED

TP101 SYS-REQ SRQ

J3 TH24 074-4011-24

TP102 +B

TP2 ACC

TP29 NC

TP4 B/U

TP6

TH301 0.285A

R352 1 1/4W

SYS ON REQ

Q302 2SB1188

R358 10K

D303 MA111

C4 100p

D2 PTZ36A

C356 560p

R354 2.2K

R355 2.2K

Q313 DTC1432U

4.7K

47K

7.6V TP9

7.6V TP8

N-BUS

ACC

SYS-REQ

13.5V ACC

SYS-REQ

C19 1000p

C21 1000p

D7 PTZ36

Q8 2SC4116

R31 56K

R34 10K

Q13 DTA114EUA

D12 PTZ36

Q16 2SC4116

R42 10K

R40 56K

D9 MA111

R33 56K

9.0V

C23 1000p

R30 5.6K

D10 MA111

D11 MA111

R37 10K

R39 10K

Q15 2SC4116

R41 47K

Q17 DTC114EUAT

3.3V TX

0V REQ

3.3V RX

9.0V ACC9V

ACC9V

To page 11 2/2

9.1V

Q4 DTA114EUA

Q5 2SD2353

R16 270 1/4W

D5 PTZ9.1B

9.8V

C12 0.1

C13 220 16V

C14 1

IC5 NJM2887

ACC4.1V

4.1V

R19 JW

R18 220K(F)

R17 100K(F)

C15 2.2

C17 47 6.3V

D3 DAN202U

ACC9V

7.6V

Q3 DTC114EUA

R15 100K

C9 0.01

3.3V SYSP1

3.3V PON1

0V GND

FIL4 EMI-FIL 1000P

L3

SPDIF+

OPEN:3.0Vpp
CONNECT:1.5Vpp

L102

C24 0.022

R20 24 1/4W

Q6 2SC3325

Q7 2SA1313

D6 MA8056M

C25 100p

C41 0.1

R26 270

C48 15p

L4

C46 100p

IC1 TC7SET08FU

VCC VSS

R24 10K

C47 0.1

C22 1

C42 1000p

0V TO 3.3V SPDIF

13.3V B/U

D1 RL253

13.5V

C3 10 25V

C1 470 16V

T1

12.5V

VDD

IC4 BD3930

VCC G VOUT

VDDREF

Q10 2SA1586

TP11 VDD

TP10 VREF

3.3V VDD

3.3V VREF

R10 39 1/4W

R13 39 1/4W

R9 39 1/4W

R14 39 1/4W

D4 M1F60

7.0 TO 8.0V

3.3V

R28 22K

R32 470

C29 0.1

C10 1

C16 1

C18 47 6.3V

C27 0.01

Q11 DTC114EUA

C2 470 16V

TM1 TM2 TM3 TM4 TM5

ILL CON

WH-LED

0V TO 9.0V/NIGHT:9.0V

WH-LED

TP33 ILP1

ILL-P-ON

DIMM-ON

0V TO 3.3V
DAY:0V,NIGHT:3.3V

ILL-P-ON
DIMM-ON

TP34 ILP2

ILL-P-ON2

GR-LED

0V TO 3.3V

ILL-P-ON2
GR-LED

0V TO 9.0V/
DAY:9.0V,NIGHT:5.2V

Q32 2SB1188

Q9 2SD1766

Q14 2SB1188

R91 10K

R27 220

R36 10K

R38 1.5K

R90 1K

R92 47K

D8 MA8056M

C28 10 16V

C26 0.1

R35 1K

Q30 DTC114EUA

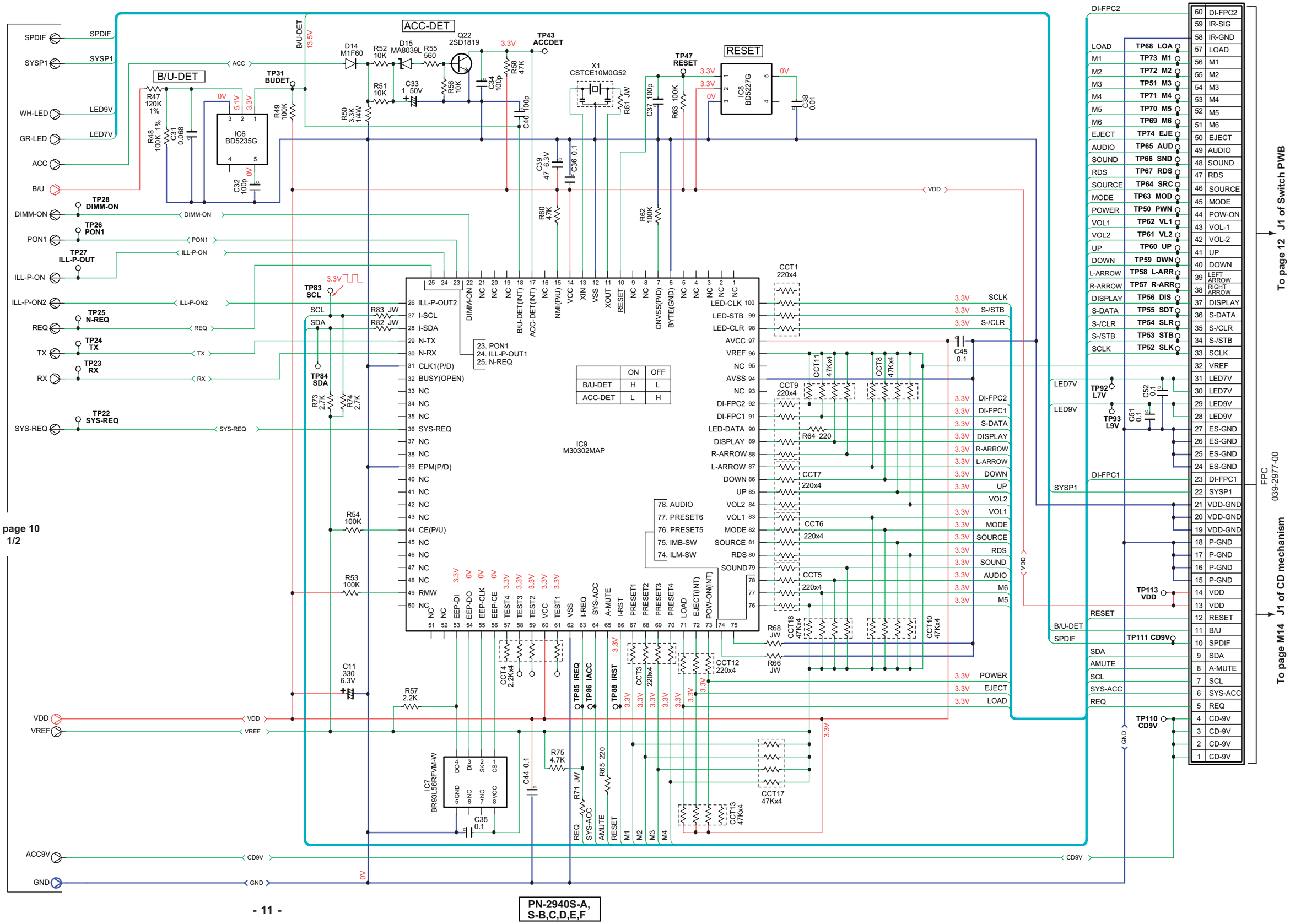
Q31 DTC114EUA

Q12 DTC114EUA

To page 11 2/2

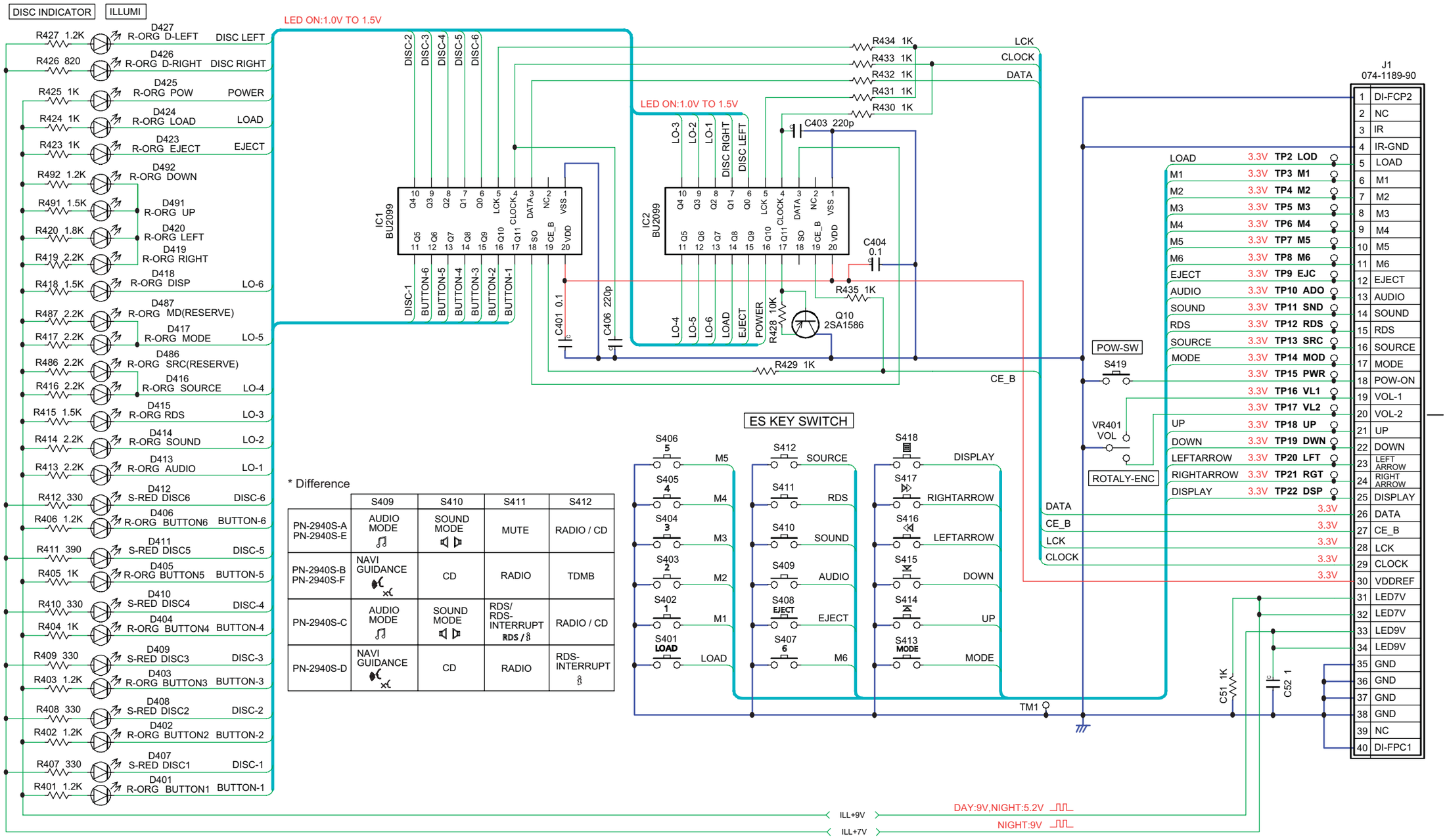
PN-2940S-A, S-B,C,D,E,F

Main PWB(B1) section 2/2



PN-2940S-A, S-B,C,D,E,F

Switch PWB(B2) section



* Difference

	S409	S410	S411	S412
PN-2940S-A PN-2940S-E	AUDIO MODE	SOUND MODE	MUTE	RADIO / CD
PN-2940S-B PN-2940S-F	NAVI GUIDANCE	CD	RADIO	TDMB
PN-2940S-C	AUDIO MODE	SOUND MODE	RDS/ RDS-INTERRUPT RDS /	RADIO / CD
PN-2940S-D	NAVI GUIDANCE	CD	RADIO	RDS-INTERRUPT

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Published by Service Dept.
Jan.2008
Printed in Japan

Service Manual

In Dash 6disk CD Auto Changer Mechanism (GI-X)

Model 929-0383-80

EXPLANATION OF IC

052-5071-95 TMP91FY42FG System Controller

Terminal Description

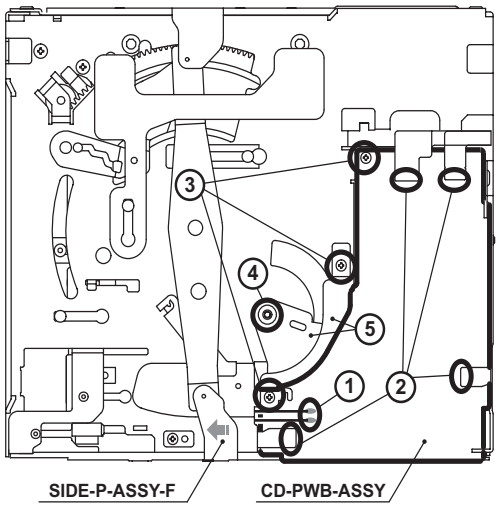
pin 1:	Vref L	: - :	Reference voltage.
pin 2:	A VSS	: - :	Negative voltage supply for analog section.
pin 3:	A VCC	: - :	Positive voltage supply for the internal analog section.
pin 4:	LO CW	: O :	Loading motor control signal output.
pin 5:	LO CCW	: O :	Loading motor control signal output.
pin 6:	A MUTE	: O :	The audio mute signal output.
pin 7:	P ON 1(SYSP1)	: O :	Power ON signal output.
pin 8:	E-EJ	: IN :	Emergency Eject input.
pin 9:	P ON 1	: O :	Power ON signal output.
pin 10:	NU	: - :	Not in use.
pin 11:	P ON 3	: O :	Power ON signal output.
pin 12:	NU	: - :	Not in use.
pin 13:	NU	: - :	Not in use.
pin 14:	NU	: - :	Not in use.
pin 15:	NU	: - :	Not in use.
pin 16:	NU	: - :	Not in use.
pin 17:	NU	: - :	Not in use.
pin 18:	DSP SO	: O :	Serial data output to the DSP IC.
pin 19:	DSP SI	: IN :	Serial data input from the DSP IC.
pin 20:	DSP SCK	: O :	The clock pulse output to DSP IC.
pin 21:	FL TX	: O :	The serial data output for flash memory.
pin 22:	FL RX	: IN :	The serial data input for flash memory.
pin 23:	LED SW	: O :	LED ON signal output.
pin 24:	PULL UP	: IN :	PULL UP
pin 25:	VCC	: - :	Positive voltage supply.
pin 26:	X out	: O :	Crystal connection.
pin 27:	VSS	: - :	Negative voltage supply.
pin 28:	X in	: IN :	Crystal connection.
pin 29:	PULL UP	: IN :	PULL UP
pin 30:	RESET	: IN :	Reset signal input.
pin 31:	TIME	: O :	For Time base.
pin 32:	NU	: - :	Not in use.
pin 33:	NU	: O :	Not in use.
pin 34:	NU	: O :	Not in use.
pin 35:	BU DET	: IN :	Backup detection signal input.
pin 36:	SW 5	: IN :	The switch signal input.
pin 37:	SBSY	: IN :	Sub code block synchronous signal detection input.
pin 38:	PON 2	: O :	Power ON signal output.
pin 39:	MODE CW	: O :	Mode motor control.
pin 40:	MODE CCW	: O :	Mode motor control.
pin 41:	U/D CW	: O :	Holder control.
pin 42:	U/D CCW	: O :	Holder control.
pin 43:	ALE	: O :	The address latch enable output.
pin 44:	DR MUTE	: O :	Drive mute signal output to the CD IC.
pin 45:	SRAM STNDB	: O :	SRAM standby signal output.
pin 46:	DSP RESET	: O :	Reset signal output to the DSP IC.
pin 47:	DSP CS	: O :	Chip select signal output to the DSP.
pin 48:	DSP ACK	: IN :	DSP acknowledge.
pin 49:	DSP LAT	: O :	The latch pulse output to DSP IC.
pin 50:	LIMIT	: IN :	Inside limit switch signal input.
pin 51:	EEP CS	: O :	The chip select output to EEP-ROM.
pin 52:	EEP SK	: O :	The clock pulse output to the EEP-ROM.
pin 53:	EEP DI	: IN :	The serial data input from the EEP-ROM.
pin 54:	EEP DO	: O :	The serial data output to the EEP-ROM.
pin 55:	HSSW 1	: IN :	It is used at the jitter measurement (the speed is 2X, shock proof is through).
pin 56:	HSSW 2	: IN :	It is used at the jitter measurement (the speed is 1X, shock proof is through).
pin 57:	DSP REQ	: IN :	DSP request input.
pin 58:	DSP STNDB	: O :	DSP standby output.
pin 59:	NU	: - :	Not in use.
pin 60:	NU	: - :	Not in use.
pin 61:	BUC CLOCK	: O :	CD IC clock pulse output.
pin 62:	VSS	: - :	Negative voltage supply.
pin 63:	NMI	: IN :	Connect to VDD via a resistor.
pin 64:	VCC	: - :	Positive voltage supply.
pin 65:	BUS 0	: I/O :	CD IC Data input / output.
pin 66:	BUS 1	: I/O :	CD IC Data input / output.
pin 67:	BUS 2	: I/O :	CD IC Data input / output.
pin 68:	BUS 3	: I/O :	CD IC Data input / output.
pin 69:	CCE	: O :	The chip enable signal output.
pin 70:	CD RESET	: O :	The reset pulse output to the CD IC.
pin 71:	T DATA	: O :	The display data output for the test mode indication.
pin 72:	T CLK	: O :	The test clock output.

pin 73: T CLR : O : The clear signal output for the test mode indication.
pin 74: NU : - : Not in use.
pin 75: NU : - : Not in use.
pin 76: NU : - : Not in use.
pin 77: NU : - : Not in use.
pin 78: FL BOOT : IN : Flash memory control.
pin 79: TEST 1 : IN : For the test.
pin 80: TEST 2 : IN : For the test.
pin 81: TEST 3 : IN : For the test.
pin 82: TEST 4 : IN : For the test.
pin 83: I2C REQ : O : Transmit request signal output.
pin 84: I2C SDA : I/O: I2C serial data input/output.
pin 85: I2C SCL : I/O: I2C serial clock input/output.
pin 86: ACC DET : IN : ACC detection signal input.
pin 87: NU : - : Not in use.
pin 88: SW 1 : IN : The switch signal input.
pin 89: VCC : - : Positive voltage supply.
pin 90: SW 2 : IN : The switch signal input.
pin 91: VSS : - : Negative voltage supply.
pin 92: SW 3 : IN : The switch signal input.
pin 93: SW 4 : IN : The switch signal input.
pin 94: NU : - : Not in use.
pin 95: PT 1 : IN : The photo sensor signal input.
pin 96: PT 2 : IN : The photo sensor signal input.
pin 97: PT 3 : IN : The photo sensor signal input.
pin 98: PT 4 : IN : The photo sensor signal input.
pin 99: PT 5 : IN : The photo sensor signal input.
pin100: Vref H : - : Reference voltage.

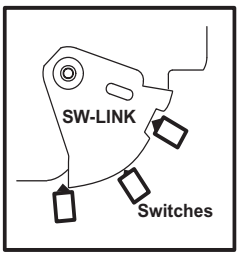
DISASSEMBLY

How to remove "CD-PWB-ASSY"

1. Add +5V to "U+" terminal of UD-MOTOR-ASSY,then SIDE-P-ASSY-F moves outside of CD-PWB.
2. Release four FPCs.
3. Remove three screws
4. Remove the washer.
5. Remove SW-H-PLATE and SW-LINK, and remove CD-PWB-ASSY.

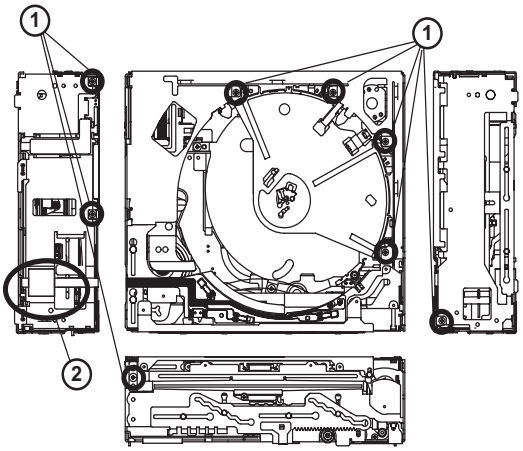


*When assembling, match SW LINK to three switches.

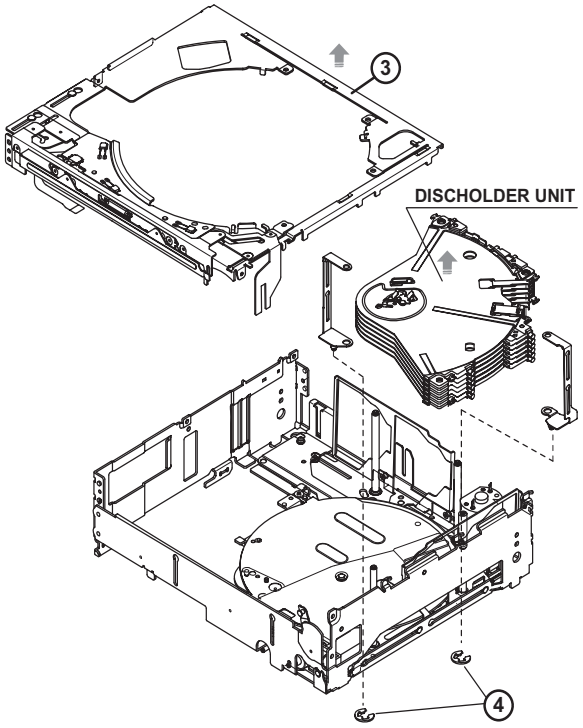


How to remove "DISCHOLDER UNIT"

1. Remove eight screws.
2. Remove the FPC.

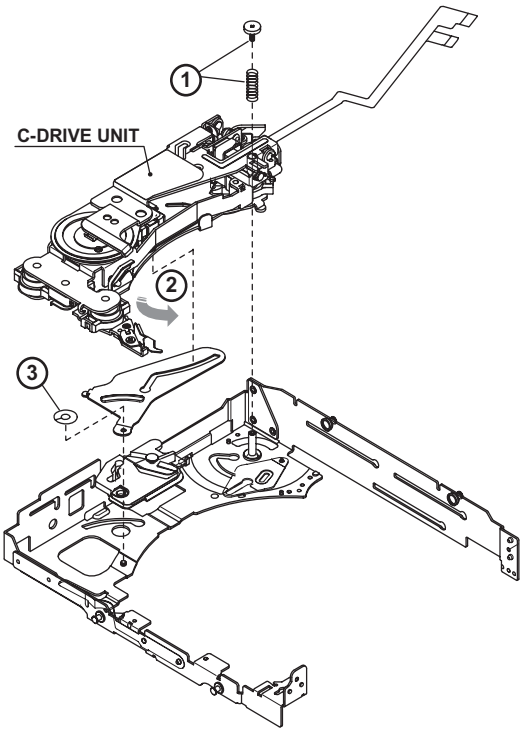


3. Remove UPPER UNIT ASSY.
4. Remove two C-RINGs, and remove DISCHOLDER UNIT.



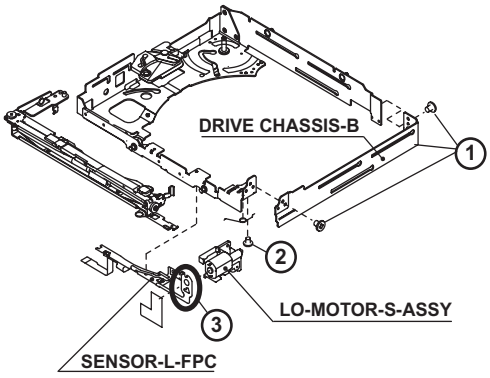
How to remove "N-DRIVE UNIT"

1. Remove the screw and DRIVE SPRING-A.
2. Rotate N-DRIVE UNIT internally.
3. Remove the washer, and remove N-DRIVE UNIT.



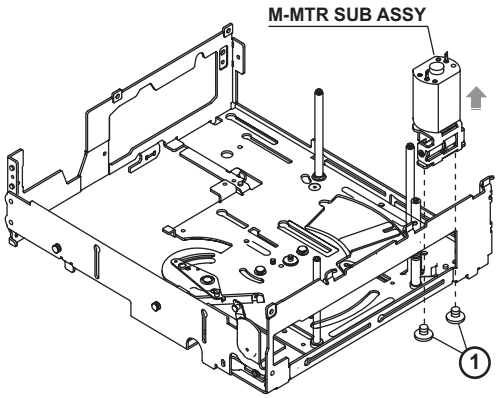
How to remove "LO-MOTOR-S-ASSY"

1. Remove two screws and DRIVE CHASSIS-B.
2. Remove the screw of the bottom side.
3. Remove the solder of SENSOR-L-FPC, and remove LO-MOTOR-S-ASSY.



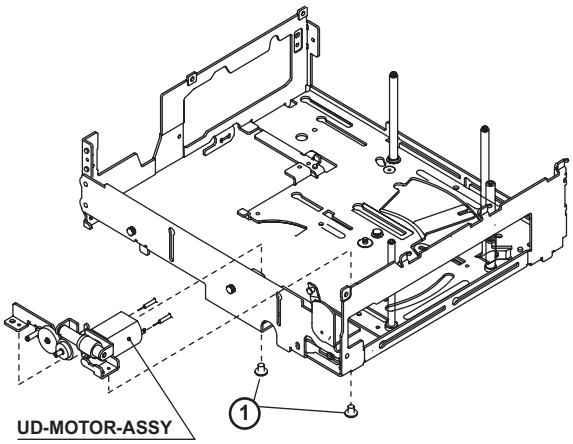
How to remove "M-MTR SUB ASSY"

1. Remove two screws, and remove M-MTR SUB ASSY.

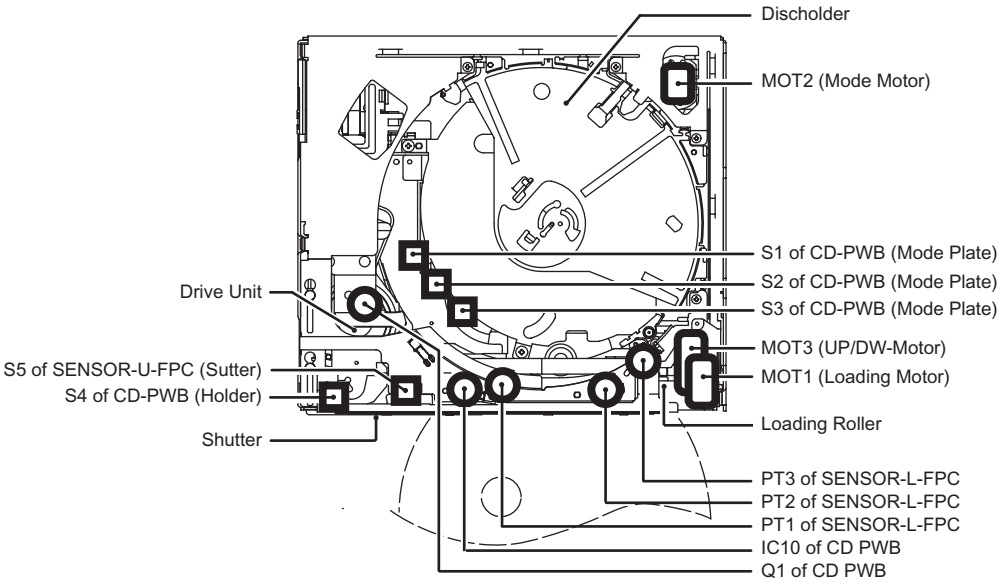


How to remove "UD-MOTOR-ASSY"

1. Remove the screw of the bottom side, and remove UD-MOTOR-ASSY.



OPERATION



Function of Mechanism

[DISC HOLDER]
Six holders.
(Related motor:UP/DW-Motor)
[DRIVE UNIT]
Chukking of a play disc.
(Related Motor:Mode motor)
[LOADING ROLLER]
Disk is stored/ejected by rotation.
(Related Motor:Laoding motor)
[SHUTTER]
Shutter at disc insertion.
(Related Motor:Mode Motor)

Function of Switches

[S1,2,3]
Detect a home position of mode plate.
Detect mode plate position by combination of on and off.
[S4]
Detection of initial position of holder.
Initial position:S4-ON,IC10-bright.
[S5]
Opening/closing detection of shutter.
OFF:Close, ON:Open

Function of Motors

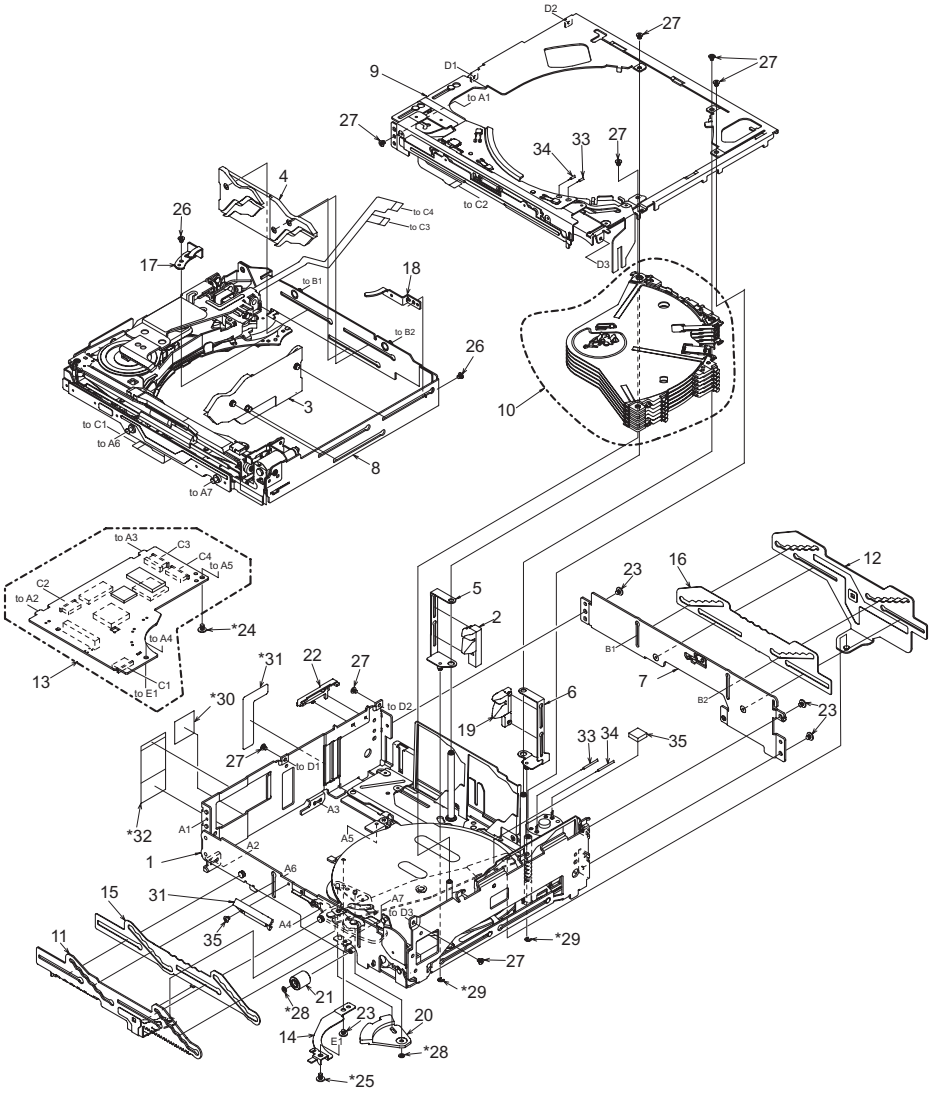
[MOT1 LOADING MOTOR]
Rotation of loading roller.
(Related Sensor:PT1,2,3,Q1)
[MOT2 MODE MOTOR]
Rotation of mode plate.
Chukking disc.
Opening/closing holder.
Movement of loading/ejecting roller.
Opening/closing shutter.
(Related Sensor:S1,2,3)
[MOT3 UP/DW-MOTOR]
Going up and down of disc holder.
Selection of disc holder.
(Related Sensor:S4,IC10)

Function of Photo sensors

[PT1]
Detection of start loading and passing of disc.
Bright:no DISC, Dark:DISC
[PT2]
Detection of finish eject and passing of disc.
Bright:no DISC, Dark:DISC
[PT3]
Detection of store and passing of disc.
Bright:no DISC, Dark:DISC
[Q1]
Detection of passing of disc.
Bright:no DISC, Dark:DISC
[IC10]
Detection of holder position

EXPLODED VIEW/PARTS LIST

Main section

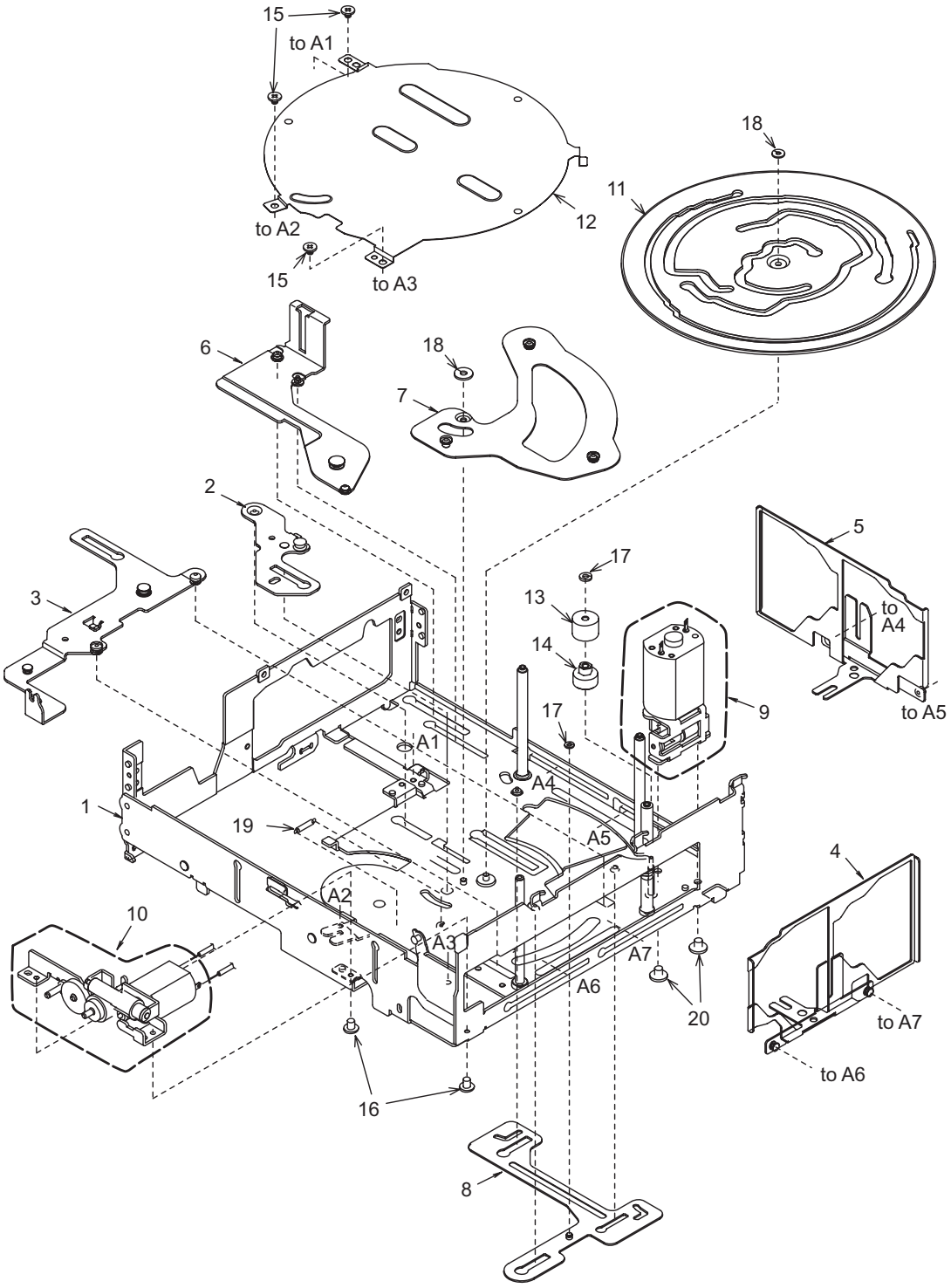


* Do not reuse the following parts.
(No.24,25,28,29,30,31,32)

NO.	PART NO.	DESCRIPTION	Q'TY
1	966-1865-20	LOWER UNIT ASSY	1
2	966-0667-21	DISC STP-ASSY L	1
3	966-1806-20	DH-SEL-ASSY S	1
4	966-1807-20	DH-SEL-ASSY R	1
5	966-0670-22	DS-SP-ASSY L	1
6	966-0671-23	DS-SP-ASSY R	1
7	966-0672-21	REAR-P-ASSY	1
8	966-1753-21	N-DRIVE-CH UNIT	1
9	966-1764-21	UPPRR UNIT ASSY	1
10	HBS-566-300	DISCHOLDER UNIT	1
11	966-0709-21	SLIDE-P-ASSY R	1
12	966-0668-24	DH-SEL-ASSY S	1
13	HBS-582-100	CD-PWB-ASSY	1
14	620-1640-20	SW-H-PLATE	1
15	620-1778-20	GAP PLATE F	1
16	620-1662-21	GAP PLATE F L	1
17	620-1685-21	DS-PLATE L	1
18	620-1686-20	DS-PLATE R	1
19	621-1634-23	DISC STOPPER R	1

NO.	PART NO.	DESCRIPTION	Q'TY
20	621-1636-24	SW LINK	1
21	621-1765-20	UD-GEAR-D	1
22	621-1715-20	FPC-STOPPER	1
23	716-1850-01	SCREW (M2.0x2.0)	4
24	716-1850-02	SCREW (M2.0x2.0)	1
25	716-1851-02	SCREW (M2.0x3.0)	1
26	716-3450-00	SCREW (M1.7x2.0)	2
27	716-3451-01	SCREW (M1.7x2.5)	8
28	746-0761-00	WASHER	2
29	744-0045-01	C-RING	1
30	347-7271-00	FPC SHEET	1
31	347-7275-00	PROTECT SHEET	1
32	347-7276-00	FPC-SHEET C	1
33	800-4921-60	VINYL-COAT WIRE	1
34	802-4921-60	VINYL-COAT WIRE	1
35	345-5824-00	RUBBER PART	1
36	621-1763-20	LOADING GUIDE B	1
37	716-1859-01	SCREW (M1.7x2.0)	1

Lower unit assy section



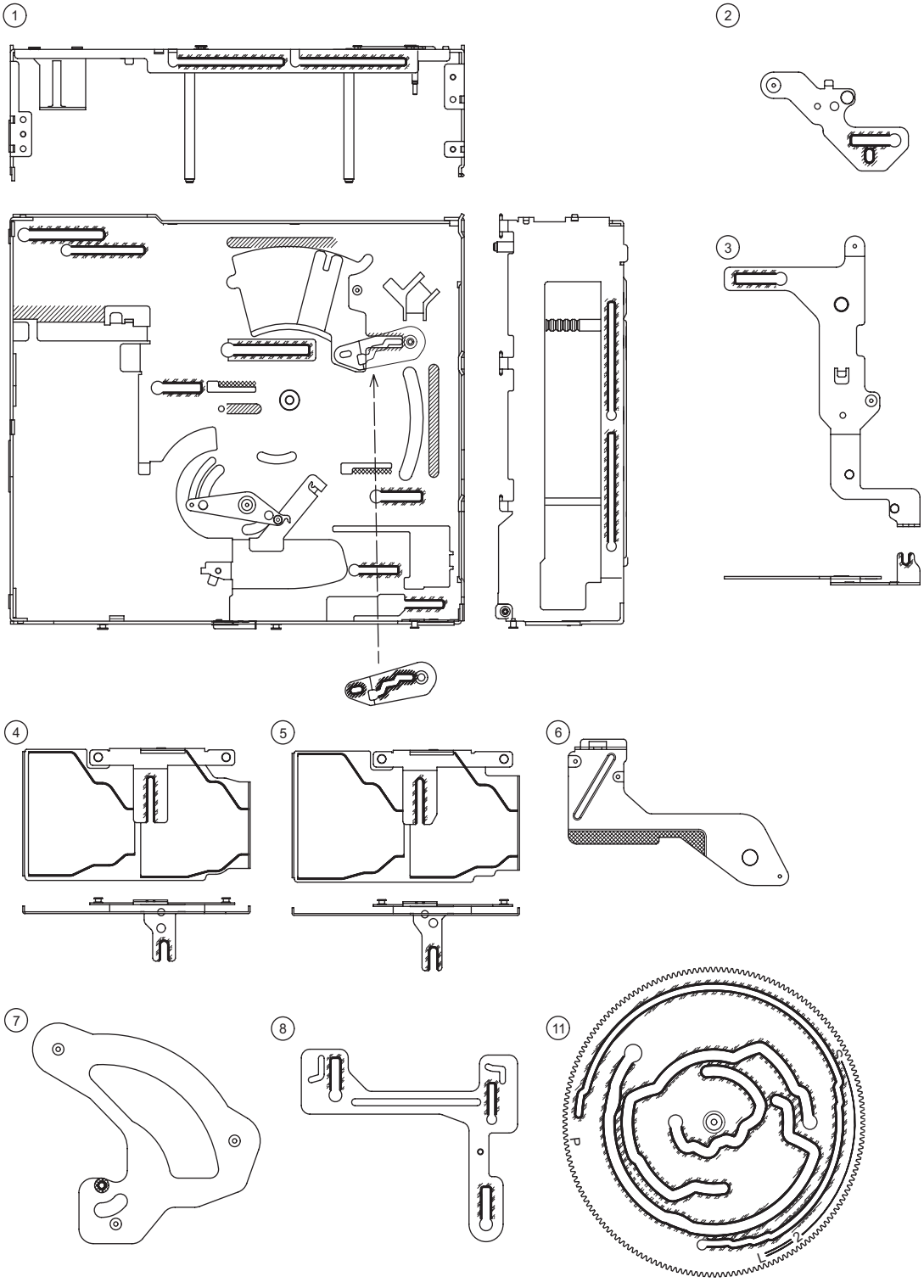
NO.	PART NO.	DESCRIPTION	Q'TY
1	966-1757-25	LOWER-C-ASSY	1
2	966-0658-22	DH-SP-ASSY A	1
3	966-1758-20	DS-SP-ASSY A	1
4	966-0660-22	DH-SP-ASSY S	1
5	966-0661-22	DH-SP-ASSY R	1
6	966-0677-23	D-SHT PL-B-ASSY	1
7	966-0659-22	DH-SP-ASSY B	1
8	966-1759-20	DS-SP-ASSY B	1
9	HBS-546-100	M-MTR SUB ASSY	1
10	HBS-568-100	UD-MOTOR-ASSY	1

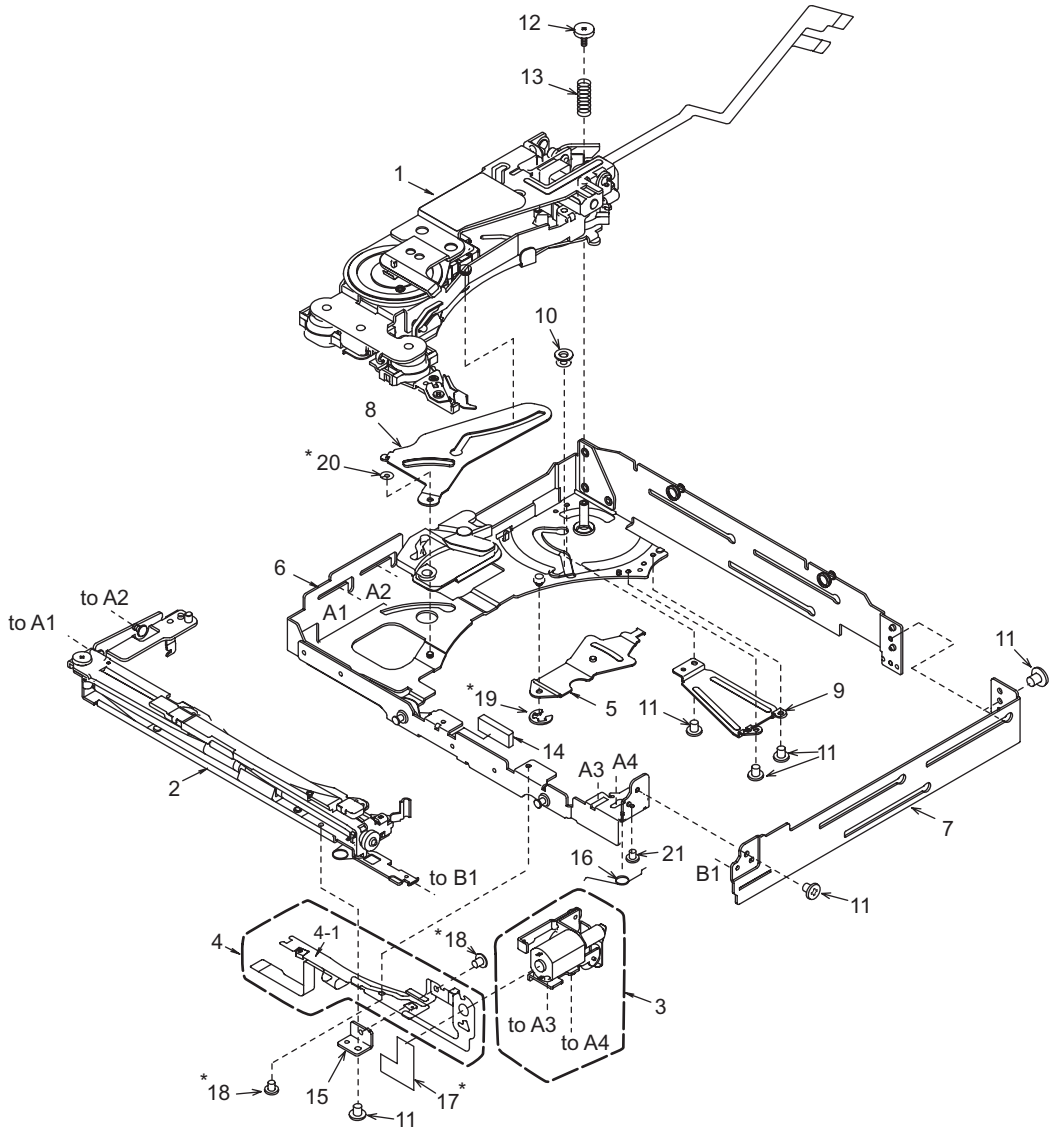
NO.	PART NO.	DESCRIPTION	Q'TY
11	620-1771-22	CAM GEAR	1
12	620-1624-24	GEAR COVER	1
13	621-0732-21	M-GEAR B	1
14	621-0733-20	M-GEAR C	1
15	716-1850-01	SCREW(M2.0x2.0)	3
16	716-3451-01	SCREW(M1.7x2.5)	2
17	746-0761-00	WASHER	2
18	746-0768-00	WASHER	2
19	750-6756-00	SW-L-SPRING	1
20	716-1851-03	SCREW(M2.0x3.0)	2

[Grease Point]

* Grease : SANKOL FG-87HSR

Put grease on the surface	
Put grease on the reverse side	
Put grease on the both sides	
Put grease on the edge	





* Do not reuse the following parts. (No.17,18,19,20)

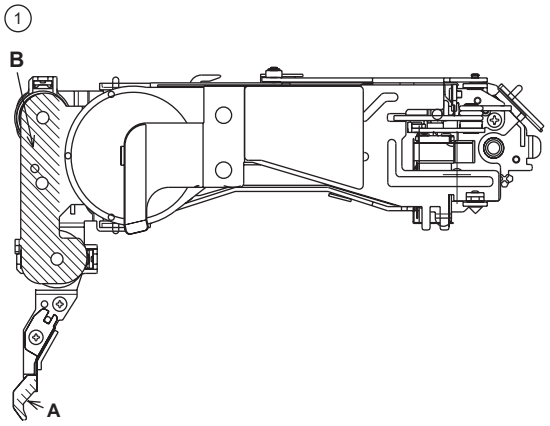
NO.	PART NO.	DESCRIPTION	Q'TY
1	HBS-565-200	N-DRIVE UNIT	1
2	HBS-567-200	LOADING-U-ASSY	1
3	HBS-556-100	LO-MOTOR-S-ASSY	1
4	HBS-552-100	L-SENSOR-S-ASSY	1
4-1	----------	SENSOR-L-FPC	1
5	966-0676-21	D-SHT LK-A-ASSY	1
6	966-1755-22	DRIVE-CH A ASSY	1
7	620-1681-21	DRIVE CHASSIS B	1
8	620-1672-21	DR-SUPPORT-PL	1
9	620-1680-20	D-SHIFT COVER	1
10	622-1743-21	D-SHIFT ROLLER B	1

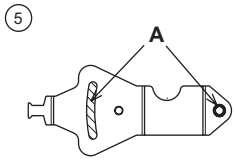
NO.	PART NO.	DESCRIPTION	Q'TY
11	716-3450-00	SCREW(M1.7x2.0)	6
12	716-3459-01	SCREW(M1.7x2.0)	1
13	750-6761-20	DRIVE SPRING A	1
14	345-5868-01	RUBBER PART	1
15	620-1651-21	S-PWB-PLATE	1
16	750-6754-20	LO-ES-SPRING B	1
17	345-5424-01	SEN-FPC GUIDE	1
18	716-1859-01	SCREW(M1.7x2.0)	2
19	744-0039-00	E-RING	1
20	746-0870-00	WASHER	1
21	716-3538-00	SCREW(M1.7x2.0)	1

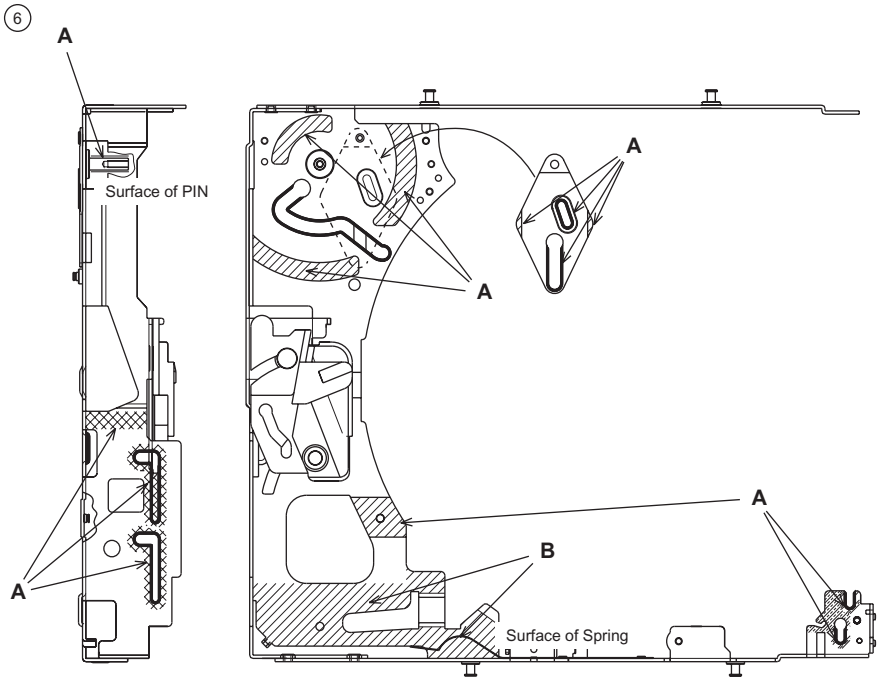
[Grease Point]

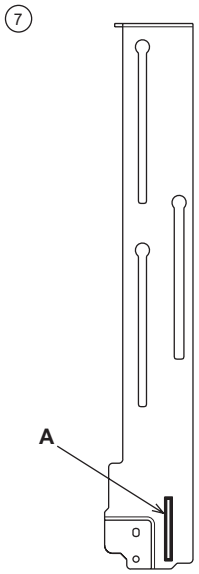
* Grease A : SANKOL FG-87HSR
* Grease B : SANKOL CFD-006MBL

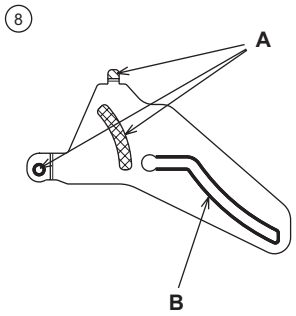
	Put grease on the surface	
	Put grease on the reverse side	
	Put grease on the both sides	
	Put grease on the edge	

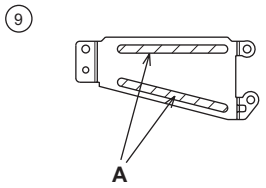


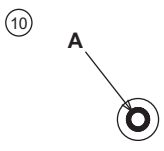




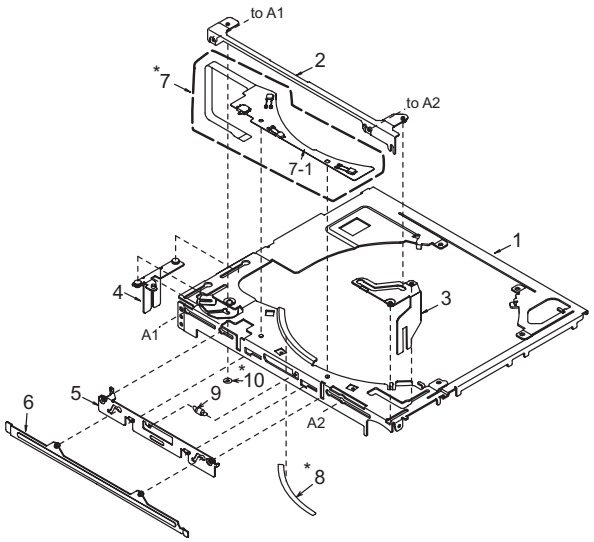








Upper unit assy section



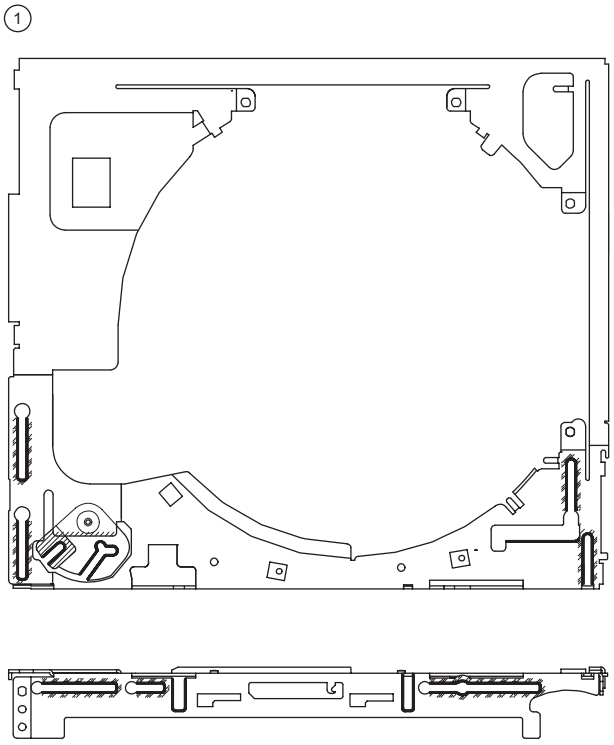
* Do not reuse the following parts. (No.7,8,10)

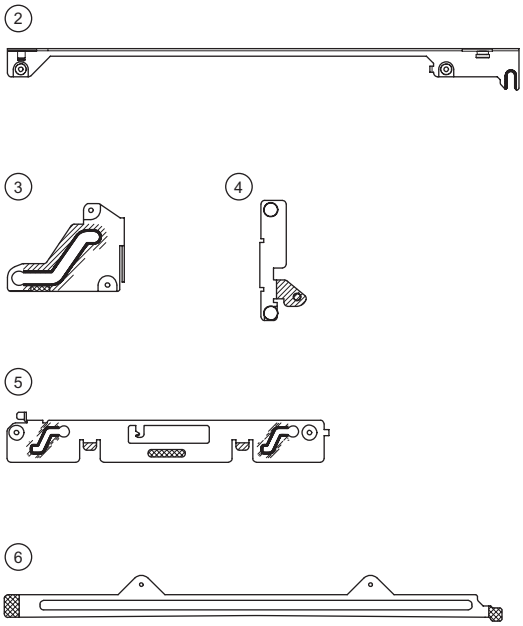
NO.	PART NO.	DESCRIPTION	Q'TY
1	966-1761-21	UPPER-CHA-ASSY	1
2	966-1765-20	LO-SHIFT A ASSY	1
3	966-0700-22	LO-SHIFT B ASSY	1
4	966-0701-21	LO-SHIFT ASSY	1
5	966-1766-20	SHUTTER-PL-ASSY	1
6	966-1763-20	SHUTTER ASSY	1
7	HBS-553-100	U-SENSOR-S-ASSY	1
7-1	----------	SENSOR-U-FPC	1
8	347-7272-00	RATTLE SHEET	1
9	750-6755-21	SHUTTER SPRING	1
10	746-0870-00	WASHER	1

[Grease Point]

* Grease : SANKOL FG-87HSR

Put grease on the surface	
Put grease on the reverse side	
Put grease on the both sides	
Put grease on the edge	





ELECTRICAL PARTS LIST

CD PWB(BM1) section

Note) Several different parts of the same reference number are alternative parts. One of those parts is used in the set.

REF No.	PART No.	DESCRIPTION
C1	042-0672-00	25V 47uF TA
C2	166-1011-50	100pF CH
C3	168-1042-78	16V 0.1uF
C4	178-1052-78	1uF
C5	042-0671-01	10V 47uF TA
C6	168-1045-56	0.1uF Z
C7	168-1032-55	0.01uF K
C8	168-1045-56	0.1uF Z
C9	178-1052-78	1uF
C10	168-1045-56	0.1uF Z
C11	168-1045-56	0.1uF Z
C12	178-1052-78	1uF
C13	178-1052-78	1uF
C14	042-0671-01	10V 47uF TA
C15	168-2222-55	2200pF K
C16	168-1032-55	0.01uF K
C20	178-1052-78	1uF
C21	168-1042-78	16V 0.1uF
C22	178-1052-78	1uF
C23	168-1045-56	0.1uF Z
C24	042-0671-01	10V 47uF TA
C25	168-1042-78	16V 0.1uF
C26	168-1045-56	0.1uF Z
C27	168-4732-78	0.047uF K
C28	166-4701-50	47pF CH
C29	168-4732-78	0.047uF K
C30	166-4711-50	470pF CH
C31	168-1532-55	0.015uF K
C32	166-4711-50	470pF CH
C33	168-1045-56	0.1uF Z
C34	168-6822-55	6800pF K
C35	168-1032-55	0.01uF K
C38	168-3332-78	0.033uF K
C39	168-4722-55	4700pF K
C40	168-1042-78	16V 0.1uF
C42	168-1045-56	0.1uF Z
C43	168-1532-55	0.015uF K
C44	168-1045-56	0.1uF Z
C45	168-1522-55	1500pF K
C46	168-1045-56	0.1uF Z
C47	166-6811-50	680pF
C48	166-6801-50	68pF CH
C49	178-1052-78	1uF
C50	042-0671-01	10V 47uF TA
C51	042-0671-01	10V 47uF TA
C52	178-1052-78	1uF
C53	168-1042-78	16V 0.1uF
C54	178-1052-78	1uF
C55	178-1052-78	1uF
C56	042-0671-01	10V 47uF TA
C57	168-1042-78	16V 0.1uF
C59	168-1045-56	0.1uF Z
C60	178-1052-78	1uF
C61	168-1032-55	0.01uF Z
C62	168-1045-56	0.1uF Z
C63	168-1045-56	0.1uF Z
C64	168-1045-56	0.1uF Z
C65	168-1045-56	0.1uF Z
C66	168-1045-56	0.1uF Z
C67	168-1045-56	0.1uF Z
C68	168-1045-56	0.1uF Z
C70	168-1045-56	0.1uF Z
C71	168-1045-56	0.1uF Z
C72	168-1045-56	0.1uF Z
C73	178-1052-78	1uF
C74	168-1045-56	0.1uF Z
C75	168-2222-55	2200pF K
C81	166-1007-50	10pF CH

REF No.	PART No.	DESCRIPTION
C82	166-1007-50	10pF CH
C83	178-1052-78	1uF
C85	178-1052-78	1uF
C86	166-1201-50	12pF CH
C87	042-1702-90	6.3V 100uF
C88	168-1045-56	0.1uF Z
C89	168-1045-56	0.1uF Z
C90	168-1045-56	0.1uF Z
C91	168-1032-55	0.01uF Z
CCT1	050-0145-59	1/16W 22 ohmx4
CCT2	050-0145-54	1/16W 47k ohmx4
CCT3	050-0145-54	1/16W 47k ohmx4
CCT4	050-0145-55	1/16W 10k ohmx4
D1	001-0529-14	MA8030-L
D1	001-4301-14	HZU3.0B1
D2	001-0367-91	1SS226
D3	001-0529-16	MA8033-L
D3	001-4301-16	HZU3.3B1
D4	001-0529-18	MA8036-L
D4	001-4301-18	HZU3.6B1
D5	001-2612-90	RB520S
D6	001-2612-90	RB520S
IC1	051-6399-00	TC94A15F
IC2	052-5071-11	TMP91CY22IFG-6P89
IC3	051-6711-30	TC94A34FG-007
IC4	051-6060-08	BD7961FM
IC5	051-5445-08	BD5227G
IC6	051-9318-00	MSM51V17400F-60T3
IC6	051-9318-10	GLT4160L04P-90TC
IC8	051-9402-78	BR93L56RF
IC9	051-6072-08	BD7931F
IC10	051-5833-00	GPISO93HCZ
IC11	051-3364-90	NJU7771
IC12	051-3364-90	NJU7771
J1	074-1237-69	SOCKET(19PIN)
J2	074-1201-65	SOCKET(15P)
J2	074-2001-65	SOCKET
J3	074-1138-56	SOCKET(6P)
J3	074-2009-56	SOCKET
J4	074-1100-61	SOCKET(11P)
J4	074-2002-61	SOCKET
J5	074-1201-61	SOCKET(11P)
J5	074-2001-61	SOCKET
Q1	060-0252-01	PT4850F
Q2	125-0021-91	DTA114EUA
Q3	198-3018-00	2SK3018
Q6	131-1188-50	2SB1188PQR
Q7	125-2027-91	DTC114EUA
Q8	131-1427-00	2SB1427
Q9	131-1188-50	2SB1188
Q10	125-2027-91	DTC114EUA
Q11	125-0021-91	DTA114EUA
Q12	125-2027-91	DTC114EUA
Q20	131-1427-00	2SB1427
R1	119-4731-15	1/10W 47k ohm
R2	119-2211-15	1/10W 220 ohm
R3	119-2211-15	1/10W 220 ohm
R4	119-1041-15	1/10W 100k ohm
R6	119-2211-15	1/10W 220 ohm
R7	119-0000-05	1/10W 0 ohm JW
R8	119-2211-15	1/10W 220 ohm
R9	119-0000-05	1/10W 0 ohm JW
R12	119-2231-15	1/10W 22k ohm
R13	119-4711-15	1/10W 470 ohm
R14	119-2211-15	1/10W 220 ohm
R15	119-1031-15	1/10W 10k ohm

REF No.	PART No.	DESCRIPTION
R16	119-0000-05	1/10W 0 ohm JW
R17	119-4731-15	1/10W 47k ohm
R18	119-2231-15	1/10W 22k ohm
R19	119-2231-15	1/10W 22k ohm
R20	119-4721-15	1/10W 4.7k ohm
R21	119-4731-15	1/10W 47k ohm
R22	119-4731-15	1/10W 47k ohm
R23	119-4731-15	1/10W 47k ohm
R24	050-0145-58	1/16W 2.2k ohm x4
R25	119-4721-15	1/10W 4.7k ohm
R26	119-4721-15	1/10W 4.7k ohm
R27	119-2711-15	1/10W 270 ohm
R28	116-3391-15	1/4W 3.3 ohm
R29	032-0145-73	1/2W 6.8 ohm
R30	119-1041-15	1/10W 100k ohm
R31	119-6811-15	1/10W 680 ohm
R32	119-1041-15	1/10W 100k ohm
R33	119-6811-15	1/10W 680 ohm
R34	119-1041-15	1/10W 100k ohm
R35	119-1511-15	1/10W 150 ohm
R36	119-1041-15	1/10W 100k ohm
R37	119-1041-15	1/10W 100k ohm
R38	119-3321-15	1/10W 3.3k ohm
R39	119-1051-15	1/10W 1M ohm
R40	119-0000-05	1/10W 0 ohm JW
R41	119-1041-15	1/10W 100k ohm
R42	119-5621-15	1/10W 5.6k ohm
R43	119-4731-15	1/10W 47k ohm
R44	119-2231-15	1/10W 22k ohm
R45	119-8231-15	1/10W 82k ohm
R46	119-3341-15	1/10W 330k ohm
R48	119-2231-15	1/10W 22k ohm
R49	116-1001-15	1/4W 10 ohm
R50	119-1011-15	1/10W 100 ohm
R51	119-6811-15	1/10W 680 ohm
R52	119-2711-15	1/10W 270 ohm
R53	119-1511-15	1/10W 150 ohm
R54	119-1041-15	1/10W 100k ohm
R55	119-1041-15	1/10W 100k ohm
R56	119-1041-15	1/10W 100k ohm
R57	119-1041-15	1/10W 100k ohm
R58	119-1041-15	1/10W 100k ohm
R59	119-1511-15	1/10W 150 ohm
R60	119-4731-15	1/10W 47k ohm
R61	119-4731-15	1/10W 47k ohm
R62	119-1051-15	1/10W 1M ohm
R64	032-0140-62	1/10W 1.0k ohm F
R65	119-2211-15	1/10W 220 ohm
R66	032-0140-53	1/10w 2.2k ohm F
R71	119-1011-15	1/10W 100 ohm
R72	119-1011-15	1/10W 100 ohm
R73	119-1011-15	1/10W 100 ohm
R77	119-0000-05	1/10W 0 ohm JW
R78	119-0000-05	1/10W 0 ohm JW
R82	119-1011-15	1/10W 100 ohm
R83	119-1031-15	1/10W 10k ohm
R85	119-1021-15	1/10W 1k ohm
R86	119-2231-15	1/10W 22k ohm
S1	013-7416-50	SW SPVLI10200
S2	013-7416-50	SW SPVLI10200
S3	013-7416-50	SW SPVLI10200
S4	013-7415-50	SW SPVGI10400
X1	061-3534-90	16.92M
X3	060-1549-90	20MHz
PWB	039-2784-21	PWB(WITHOUT COMPONENTS)

Sensor-L-PFC(BM2) section

REF No.	PART No.	DESCRIPTION
PT1	060-0252-01	PT14850F
PT2	060-0252-01	PT14850F
PT3	051-5833-00	GP1S093HCZ

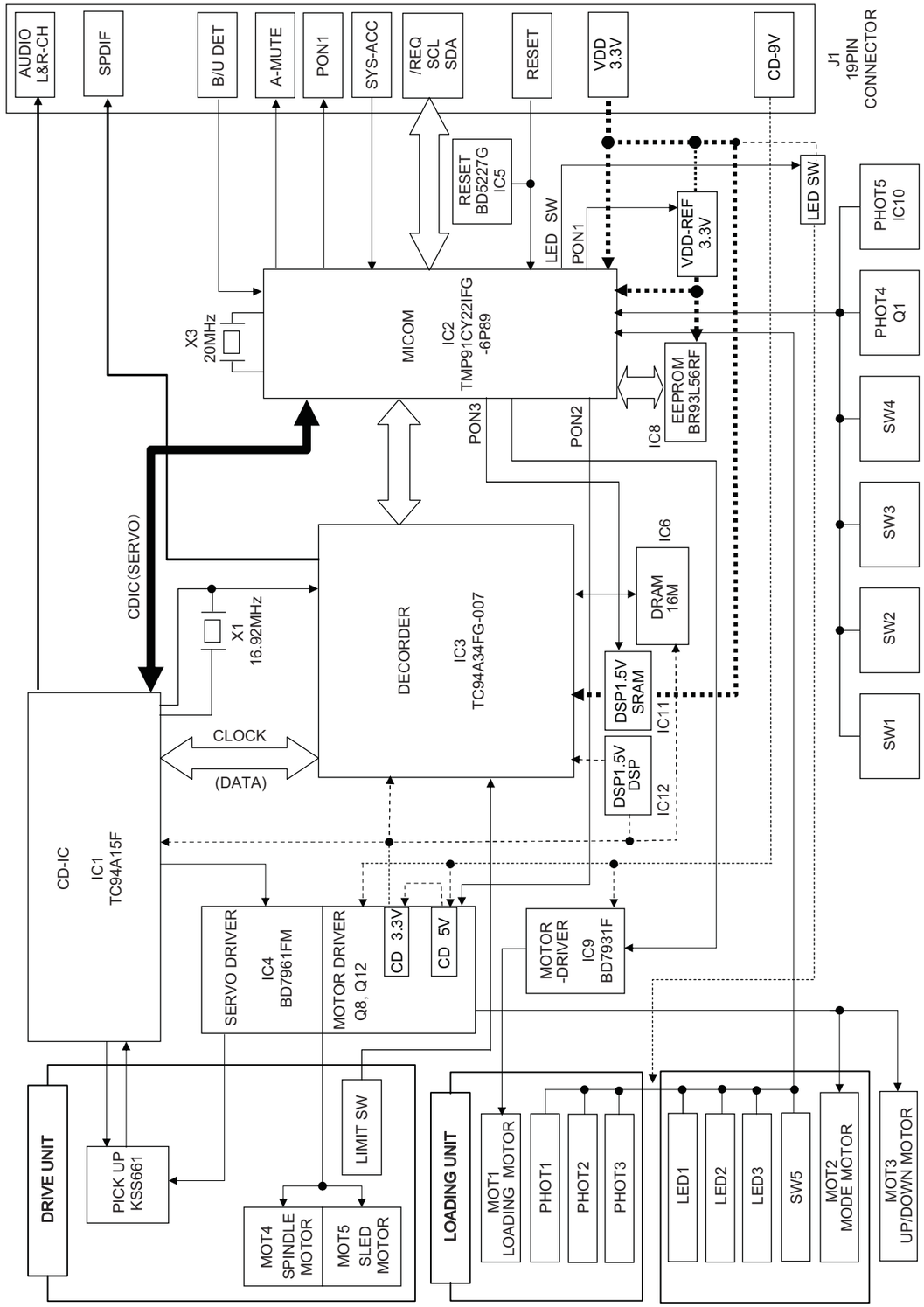
REF No.	PART No.	DESCRIPTION
PWB	039-2467-21	PWB(WITHOUT COMPONENTS)

Sensor-U-PFC(BM3) section

REF No.	PART No.	DESCRIPTION
LED1	001-7077-00	GL4804
LED2	001-7077-00	GL4804
LED3	001-7077-00	GL4804

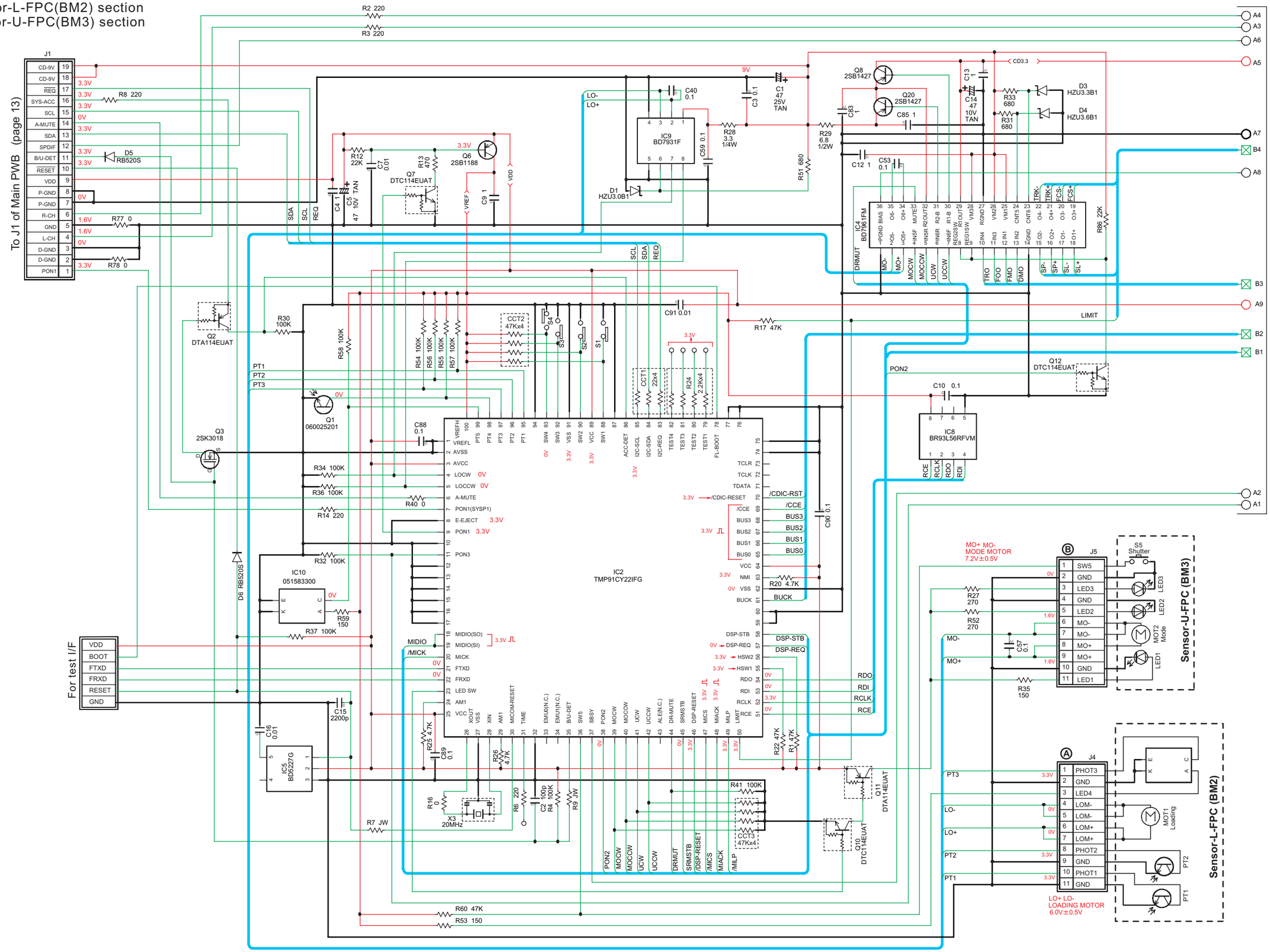
REF No.	PART No.	DESCRIPTION
S5	013-7417-50	ABC1122P161
PWB	039-2466-20	PWB(WITHOUT COMPONENTS)

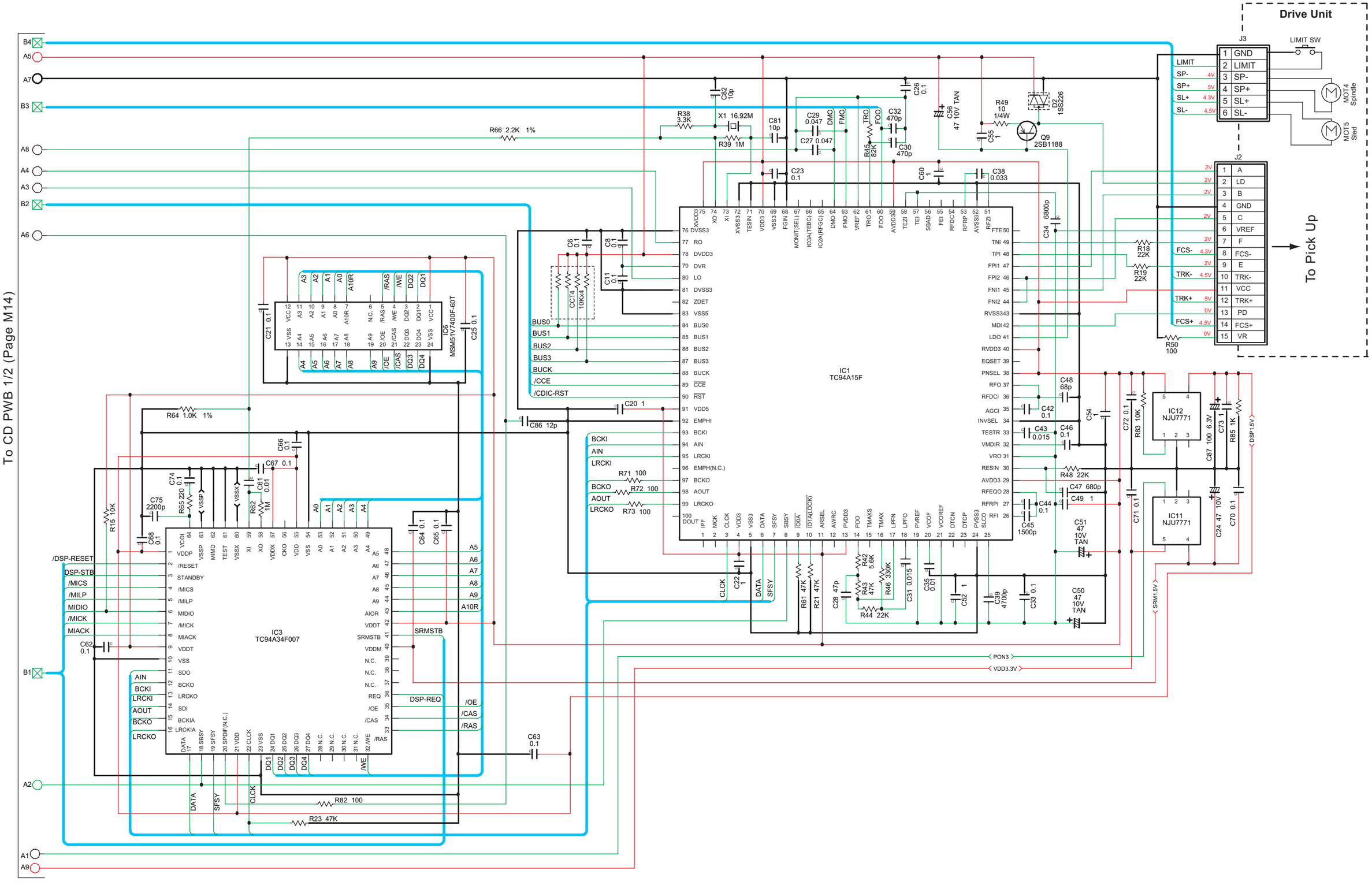
BLOCK DIAGRAM



CIRCUIT DIAGRAM

CD PWB(BM1) section 1/2
Sensor-L-FPC(BM2) section
Sensor-U-FPC(BM3) section



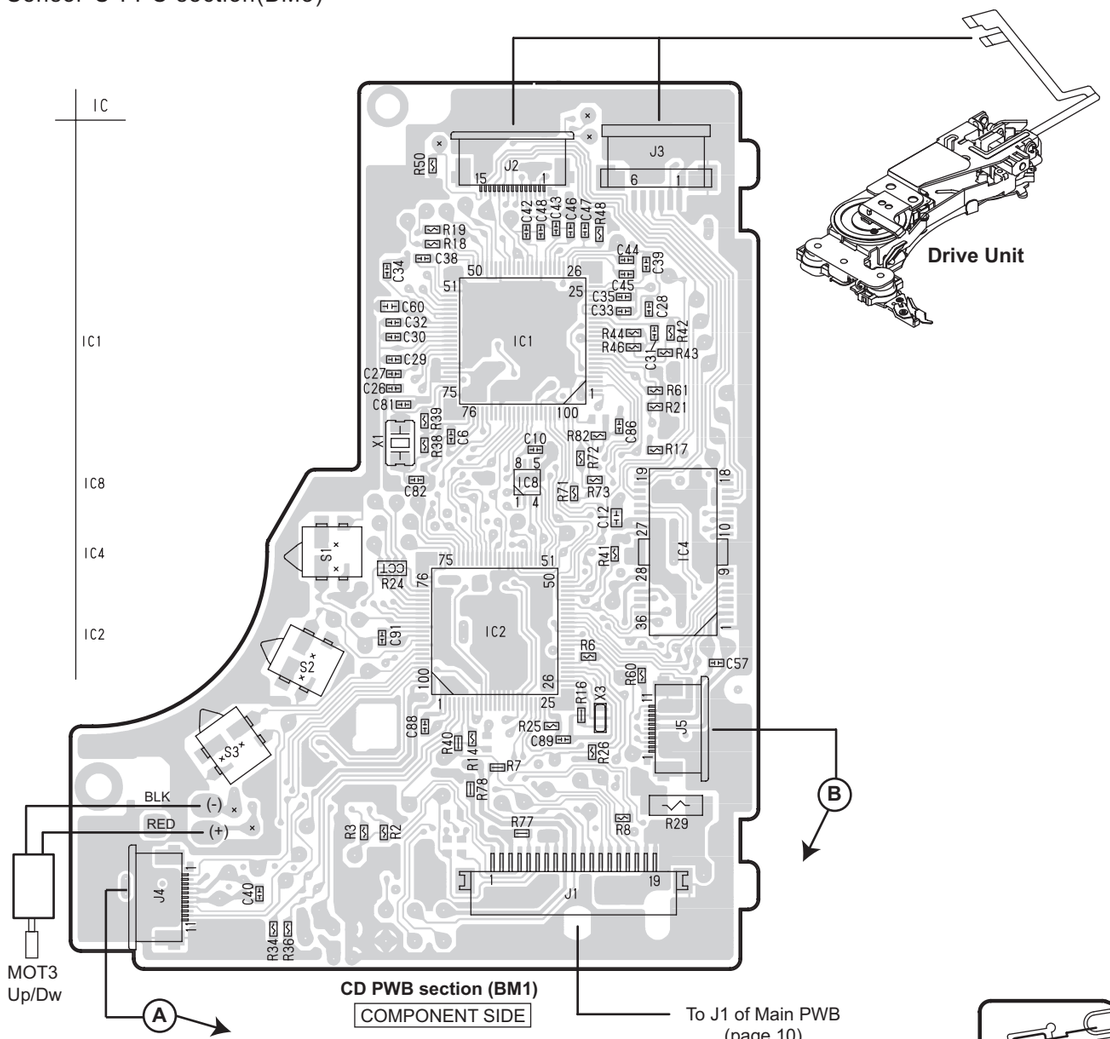

Drive Unit
J3
LIMIT SW
1 GND
2 LIMIT
3 SP-
4 SP+
5 SL+
6 SL-
MOT4 Spindle
MOT5 Sled
J2
1 A
2 LD
3 B
4 GND
5 C
6 VREF
7 F
8 FCS-
9 E
10 TRK-
11 VCC
12 TRK+
13 PD
14 FCS+
15 VR
To Pick Up
To CD PWB 1/2 (Page M14)
IC1
TC94A15F
IC3
TC94A34F007
IC6
MSM51V7400F-60T
IC12
NJU7771
IC11
NJU7771
Q9
2SB1188
D2
1SS226
X1 16.92M
CCT4
10KX4
/DSP-RESET
DSP-STB
/MICS
/MILP
MIDIO
/MICK
MIACK
AIN
BCKI
LRCKI
AOUT
BCKO
LRCKO
DSP-REQ
SRMSTB
DATA
SFSY
CLCK
PON3
VDD3.3V
SRM1.5V
DSP1.5V

PRINTED WIRING BOARD

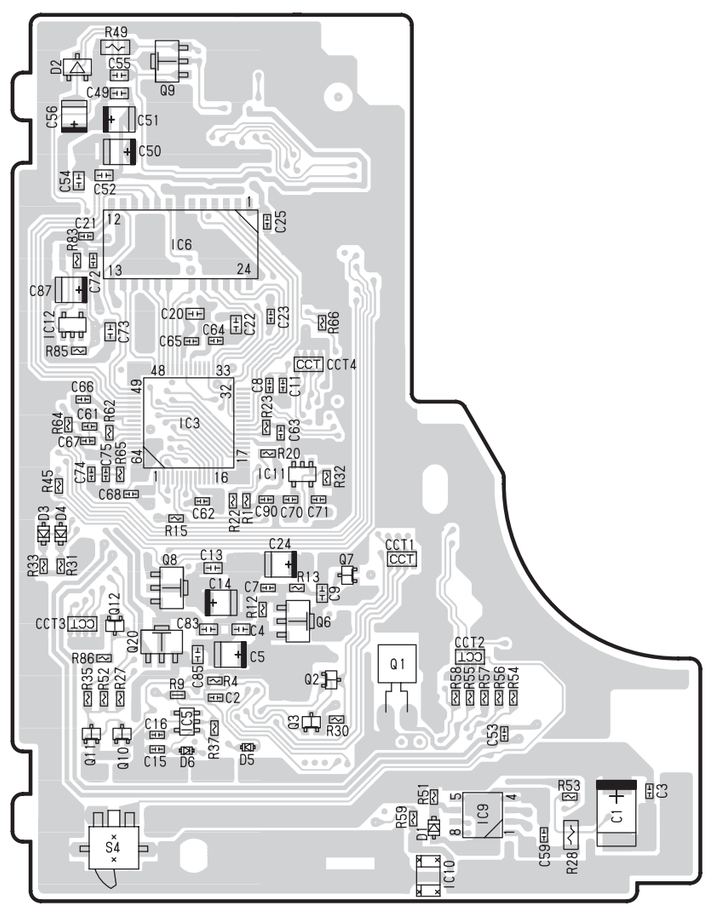
CD PWB section(BM1)
Sensor-L-FPC section(BM2)
Sensor-U-FPC section(BM3)

Caution:

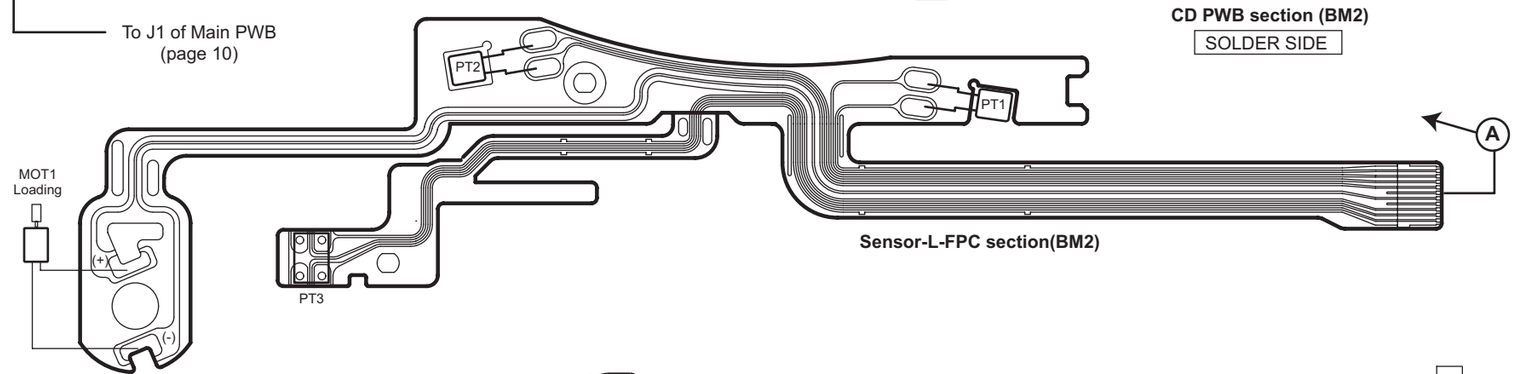
COMPONENT SIDE:	SOLDER SIDE:
Parts on the component side seen from the component side are indicated.	Parts on the solder side seen from the solder side are indicated.

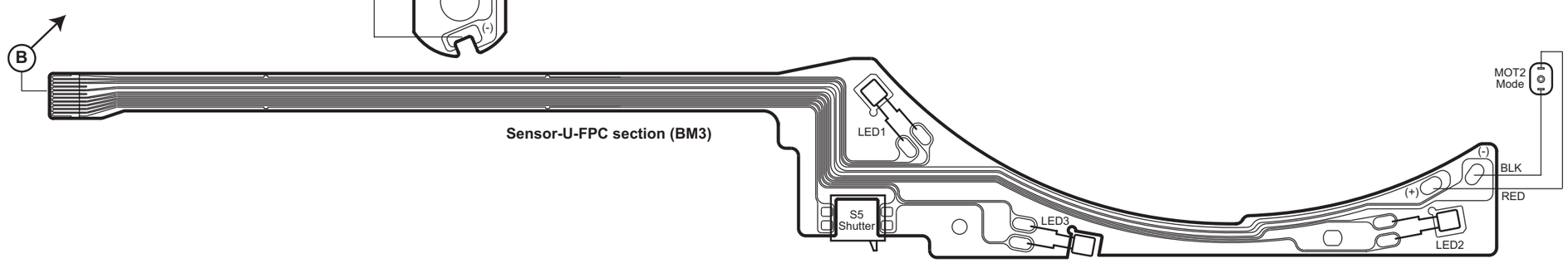


CD PWB section (BM1)
COMPONENT SIDE



CD PWB section (BM2)
SOLDER SIDE





To J1 of Main PWB (page 10)